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ST-3	STORAGE BOX SECTION & DETAILS
ST-4	EXISTING PUMPING PLANT PLAN & DEMO SECTION
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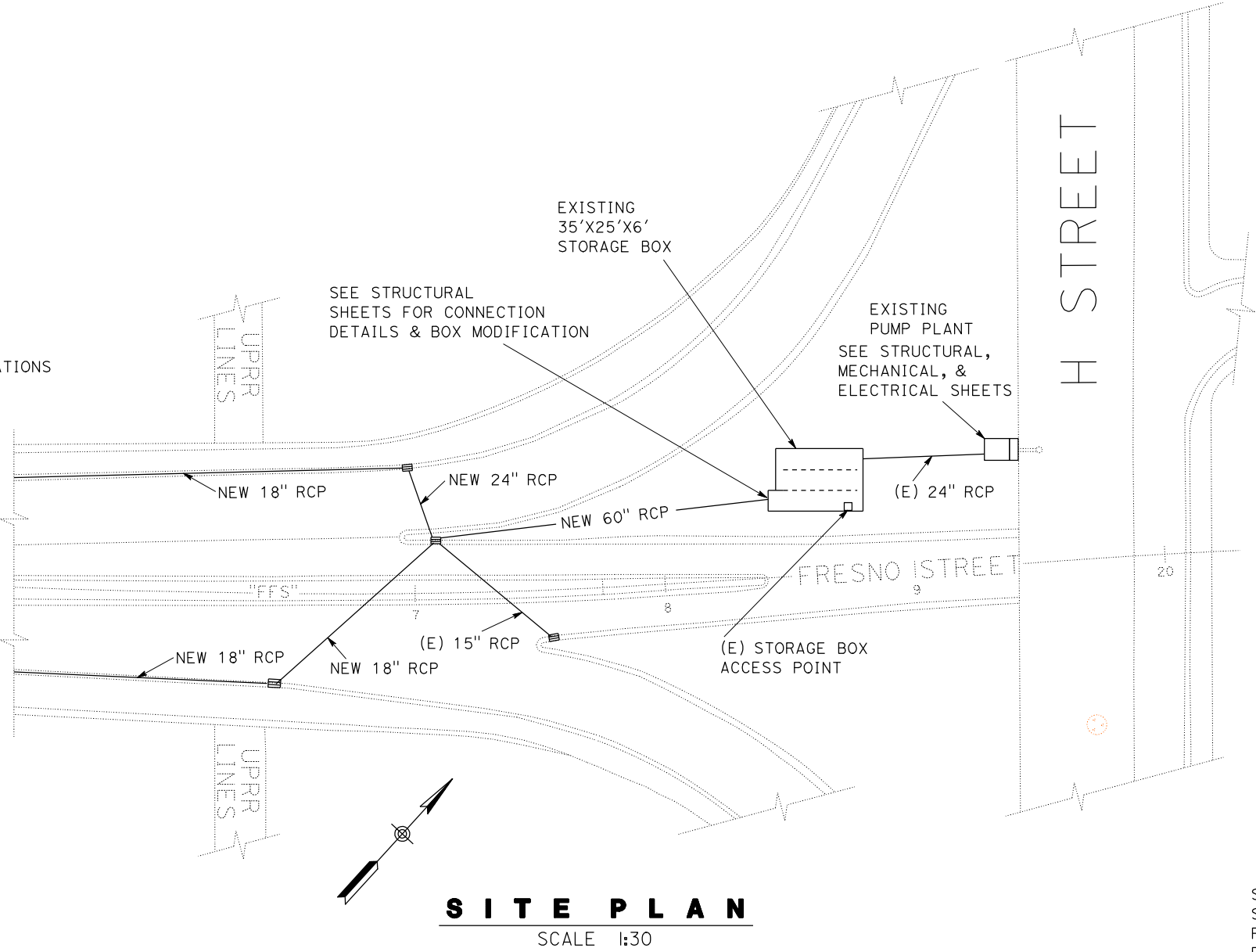
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ABBREVIATIONS	
CL	CENTERLINE
PL	PLATE
Ø	DIAMETER
APC	ALTERNATIVE PIPE CULVERT
c.f.	CUBIC FEET
DIP	DUCTILE IRON PIPE
EL	ELEVATION
(E)	EXISTING
FT	FEET
FL	FLOW LINE
GSP	GALVANIZED STEEL PIPE
in	INCHES
Max.	MAXIMUM
Min.	MINIMUM
O.D.	OUTSIDE DIAMETER
lb	POUND
RCP	REINFORCED CONCRETE PIPE
Typ.	TYPICAL
WSP	WELDED STEEL PIPE

EQUIPMENT SCHEDULE

EQUIPMENT SCHEDULE					
EQUIPMENT	PUMP PERFORMANCE			ELECTRICAL CHARACTERISTICS	
Drainage Pumps No. 1 and 2	PUMPING RATE (per pump)		TOTAL DYNAMIC HEAD		3 phase, 60 Hz 900 RPM (sync.), 15 HP Voltage to be 208 VAC or 240 VAC to match electrical service
	900 GPM	2.00 CFS	32.8 FT		
	1200 GPM	2.67 CFS	29.5 FT		
	1500 GPM	3.34 CFS	26.1 FT		



DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

Michael R. White
REGISTERED MECHANICAL ENGINEER
DATE 5/29/2012

REGISTERED PROFESSIONAL ENGINEER
Michael R. White
No. M29108
Exp. 6/30/2014
MECH
STATE OF CALIFORNIA

PLANS APPROVAL DATE _____

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

RAINFALL DATA		
Storm Time (min)	R ₂ (in)	R ₅₀ (in)
5	0.145	0.377
10	0.195	0.509
15	0.233	0.607
20	0.264	0.688
30	0.315	0.821
60	0.426	1.110

Pump drainage area = 5.0 acres
Impervious = 95%
Runoff factor = 0.90
Equivalent acreage = 4.98 acres

Storage Box: 3,360 cubic feet - usable
Storage (collection system): 3,468 cubic feet
For details of collection system, see "Drainage Plans"
For underground electrical conduits, see "Electrical Plans"
Low Edge Of Pavement (LOEP): EL. 266.74

 DESIGN SUPERVISOR		DESIGN BY <i>Michael R. White</i> CHECKED <i>Alan M. Torres</i>	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO. POST MILE	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT GENERAL PLAN AND SHEET INDEX	SHEET GP	
 DESIGN ENGINEER		DETAILS BY <i>Michael R. White</i> CHECKED <i>Alan M. Torres</i>						
		QUANTITIES BY <i>Michael R. White</i> CHECKED <i>Alan M. Torres</i>						
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT 3618 PROJECT NUMBER & PHASE 06120002391	CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY) DISREGARD PRINTS BEARING EARLIER REVISION DATES → 4/28/12 5/14/12 5/29/12	SHEET OF	
TAEMWW Imperial Rev. 3/12				EA 2HT20x			GP.dgn	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

C. N. Bapat
REGISTERED CIVIL ENGINEER

05-29-12
DATE

REGISTERED PROFESSIONAL ENGINEER

C. N. Bapat

No. 46493


Exp. 6-30-13

CIVIL

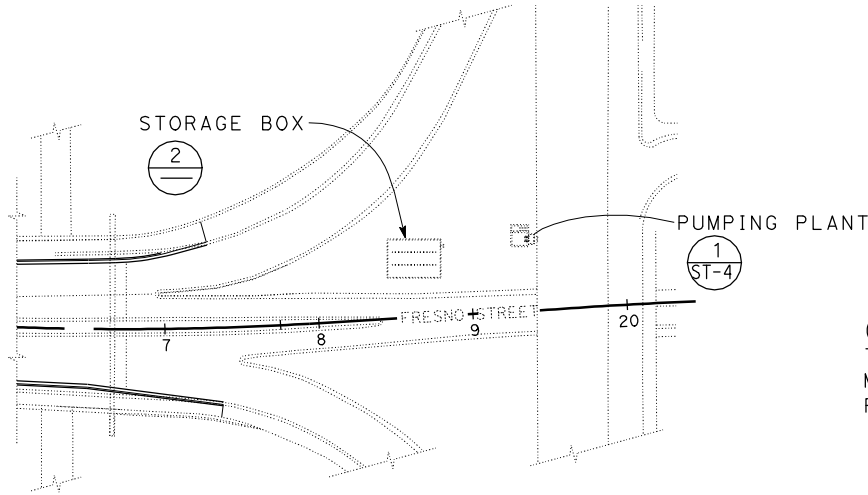
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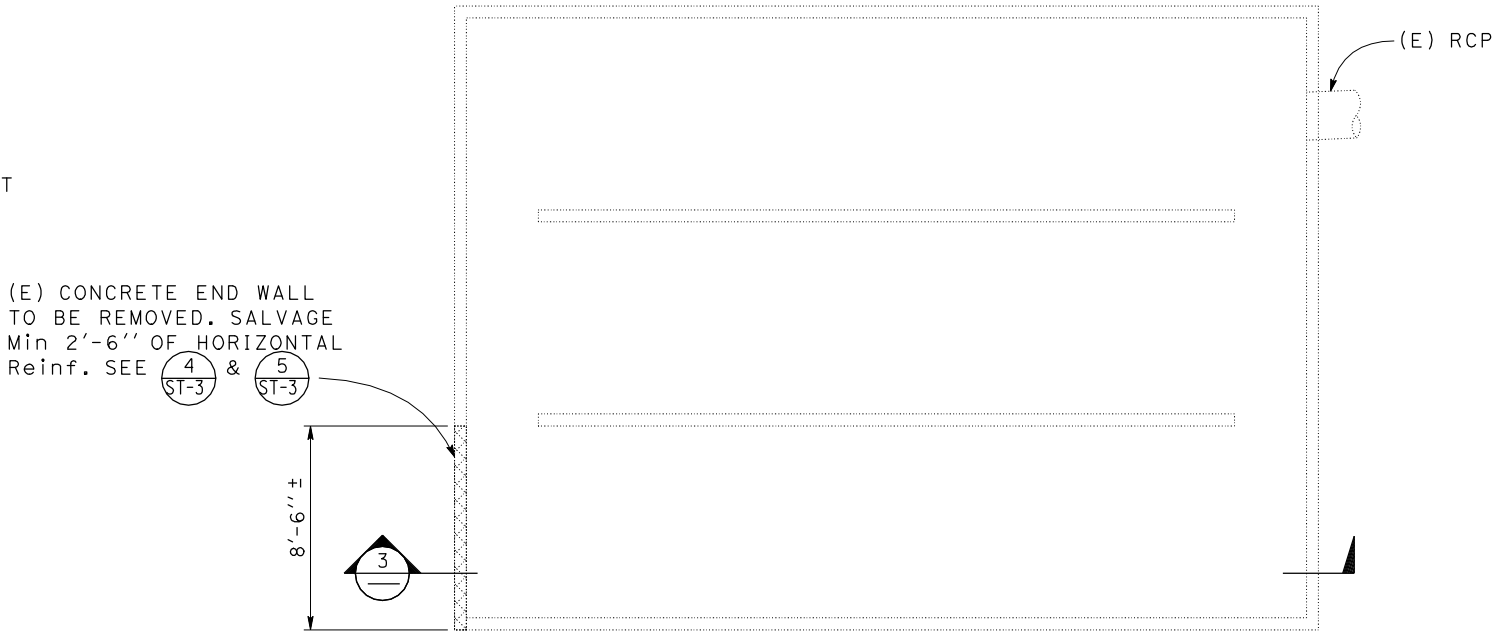
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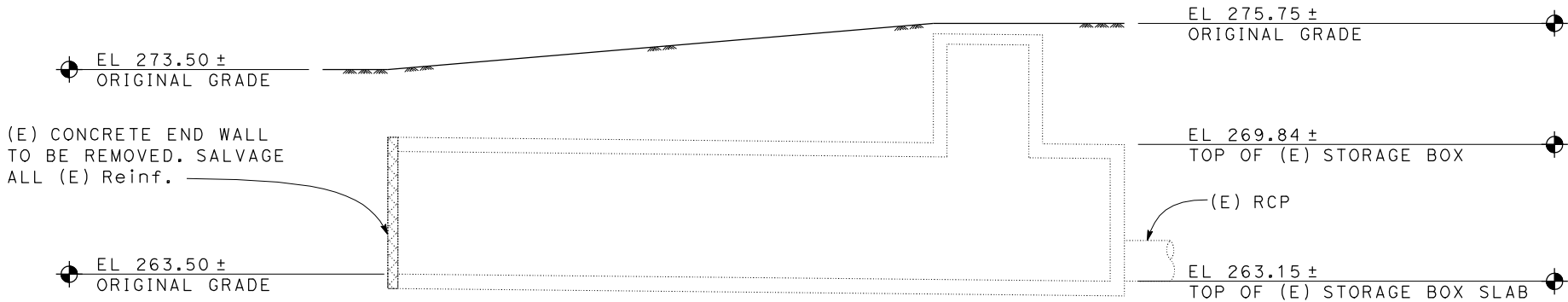
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HIGH-SPEED RAIL AUTHORITY



1 (EXISTING) SITE PLAN
Scale 1" = 64' - 0"



2 DEMO CONCRETE WALL PLAN
Scale 1/4" = 1' - 0"



3 DEMO CONCRETE WALL SECTION
Scale 1/4" = 1' - 0"

NOTE:
The Contractor shall verify all
controlling field dimensions
before ordering or fabricating
any material.

<div>RE Travis</div> <div>DESIGN SUPERVISOR</div> <div></div> <div>DESIGN ENGINEER</div>		DESIGN	BY Chandra Bapat	CHECKED Thomas Tong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ARCHITECTURAL AND STRUCTURAL DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT			SHEET ST-0					
		DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat			POST MILE	PUMPING PLANT RETROFIT	STORAGE BOX DEMO							
		QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong					PLAN & SECTION							
TAEMWW Imperial Rev. 7/10					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	UNIT PROJECT NUMBER & PHASE	3581 06120002391	CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET	OF
												DISREGARD PRINTS BEARING EARLIER REVISION DATES	05-18-12 05-22-12 05-24-12 05-29-12			
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A

PUMPING PLANT DESIGN NOTES:

- Design: AASHTO LRFD Bridge Design Specification, 4th Edition with California Amendments Preface dated December 2008
 - Loads:
 - Vertical Box:
 - Earth Loads (Equivalent Fluid Pressure):
 - 60 pcf above GWT
 - 90 pcf below GWT
 - Horizontal Box:
 - Live Load: HS 20-44 Truck
 - Roof: 30% impact up to 3' of cover, no impact above 3' of cover.
 - Walls: No surcharge
 - Invert: No impact
 - Earth Loads (Equivalent Fluid Pressure for two conditions):
 - 140 pcf vertical and 42 pcf horizontal
 - 140 pcf vertical and horizontal
 - Landings: Live Load 100 psf
 - Reinforced Concrete (Ultimate Strength Design):
 - $f'_c = 3,250$ psi
 - $f_y = 60,000$ psi
 - Miscellaneous Metal (Working Stress Design):
 - $f_y = 36,000$ psi unless otherwise noted
- Soil Report: Dated May 14, 2012.

B

DETAIL NOTES:

- Metal Work Notes:
 - All metal work shall be hot dip galvanized after fabrication
 - Secure metal to metal connections with a $\frac{1}{2}'' \varnothing \times 1\frac{1}{2}''$ hex head machine bolt, lock washer and hex nut unless otherwise noted.
 - Mechanical Expansion Anchors shall be $\frac{5}{8}'' \varnothing$ and have a 4'' minimum embedment, 3'-0'' maximum spacing and placed 6'' from ends, two minimum, unless otherwise shown.
 - Mechanical Expansion Anchors used for securing ladders inside of Pumping Plant shall be of stainless steel.
 - All lock washers shall be helical spring lock washers.
 - All Railing and Ladders shall have smooth edges.
 - Welded Steel Grate: Unless otherwise noted
 - Bearing Bars $1\frac{3}{4}'' \times \frac{3}{16}'' @ 1\frac{3}{16}''$ C-C
 - Cross Bars $\frac{1}{2}'' @ 4''$ C-C
 - Trim Bars $1\frac{3}{4}'' \times \frac{3}{16}''$ fillet welded to ends of Bearing Bars
- For Discharge Pipe locations and elevations, see Mechanical Plans.
- For APC and CIPCP elevation and locations, see Road Plans.

ABBREVIATIONS	
Alt	ALTERNATIVE
APC	ALTERNATIVE PIPE CULVERT
C-C	CENTER-TO-CENTER
Clr	CLEAR
Conc	CONCRETE
Const	CONSTRUCTION
EL	ELEVATION
(E)	EXISTING
Exp	EXPANSION
FL	FLOW LINE
GWT	GROUND WATER TABLE
Jt	JOINT
MEA	MECHANICAL EXPANSION ANCHOR
OH	OPPOSITE HAND
PP LOL	PUMPING PLANT LAYOUT LINE
RCP	REINFORCED CONCRETE PIPE
Sim	SIMILAR
Stagg	STAGGERED
Sym	SYMMETRICAL
Typ	TYPICAL

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

C. N. Bapat
REGISTERED CIVIL ENGINEER

05-29-12
DATE

REGISTERED PROFESSIONAL ENGINEER

C. N. Bapat

No. 46493


Exp. 6-30-13

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STATE OF CALIFORNIA







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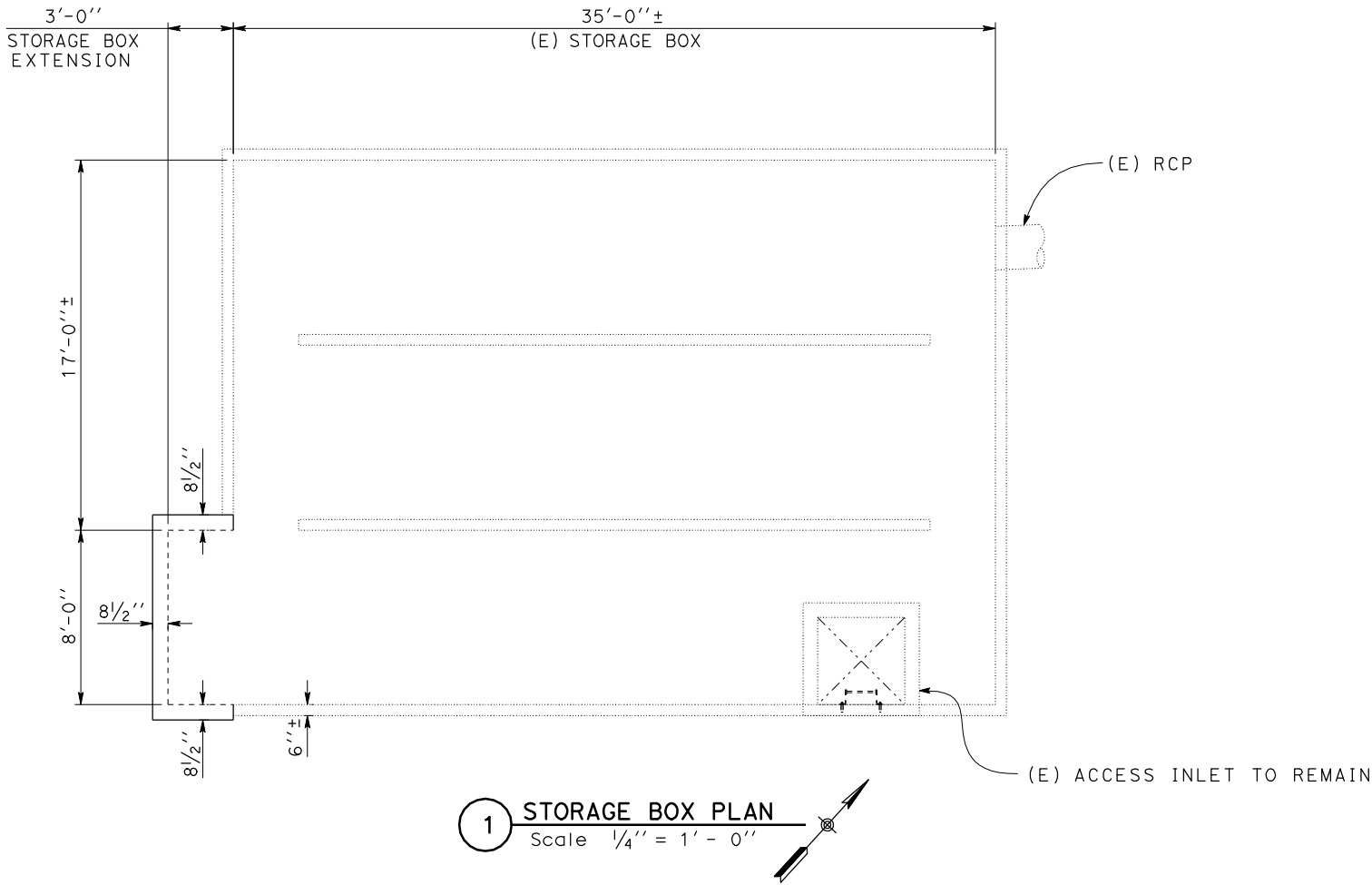


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SYMBOLS

- ELEVATION OF WORKING POINT
- EXISTING FEATURES
- EARTH
- FREE DRAINING GRANULAR MATERIAL
- REINFORCED CONCRETE
- 3
ST-1

5b
- DETAIL NUMBER OR NOTE NUMBER
-
- ADDITIONAL REFERENCE (IF REQUIRED)
-
- SHEET NUMBER

LIMITS OF STRUCTURE BACKFILL
(SHOWN ON PLAN VIEW)STRUCTURE EXCAVATION & BACKFILLCONCRETE REMOVAL

NOTE:
The Contractor shall verify all
controlling field dimensions
before ordering or fabricating
any material.

DESIGN	BY Chandra Bapat	CHECKED Thomas Tong
DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat
QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong

STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ARCHITECTURAL
AND
STRUCTURAL DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
STORAGE BOX PLAN

SHEET
ST-1

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

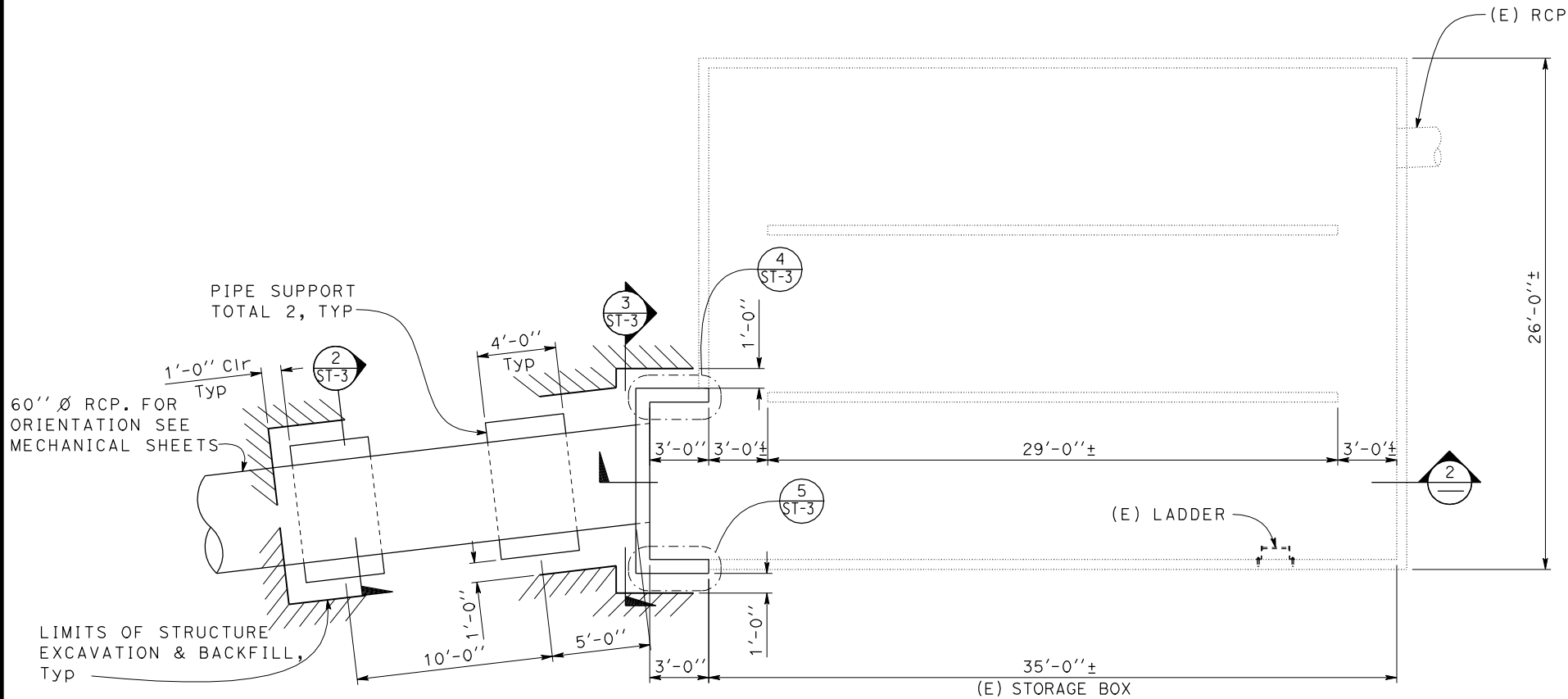
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1 STORAGE BOX FOUNDATION PLAN
Scale 1/4" = 1' - 0"



2 STORAGE BOX SECTION
Scale 1/4" = 1' - 0"

NOTE:
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	DESIGN	BY	Chandra Bapat	CHECKED	Thomas Tong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ARCHITECTURAL AND STRUCTURAL DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT			SHEET ST-2						
		DETAILS	BY	Daniel Harakh	CHECKED			Chandra Bapat	POST MILE	PUMPING PLANT RETROFIT	STORAGE BOX FOUNDATION PLAN & SECTION							
		QUANTITIES	BY	Chandra Bapat	CHECKED			Thomas Tong										
TAEWW Imperial Rev. 7/10				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3				UNIT PROJECT NUMBER & PHASE	3581 06120002391	CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET	OF
												DISREGARD PRINTS BEARING EARLIER REVISION DATES		05-18-1205-22-1205-24-1205-29-12				
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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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C. N. Bapat
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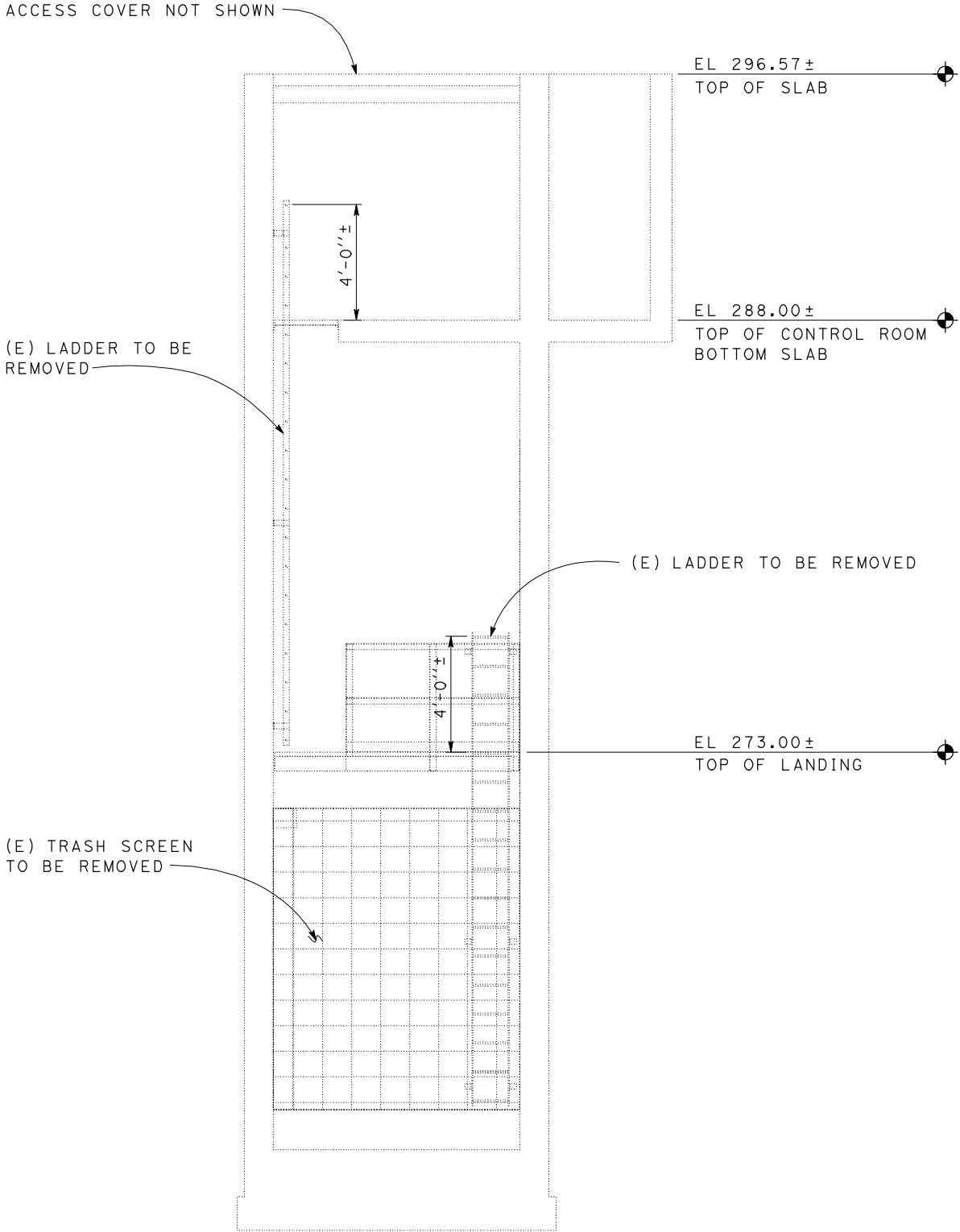
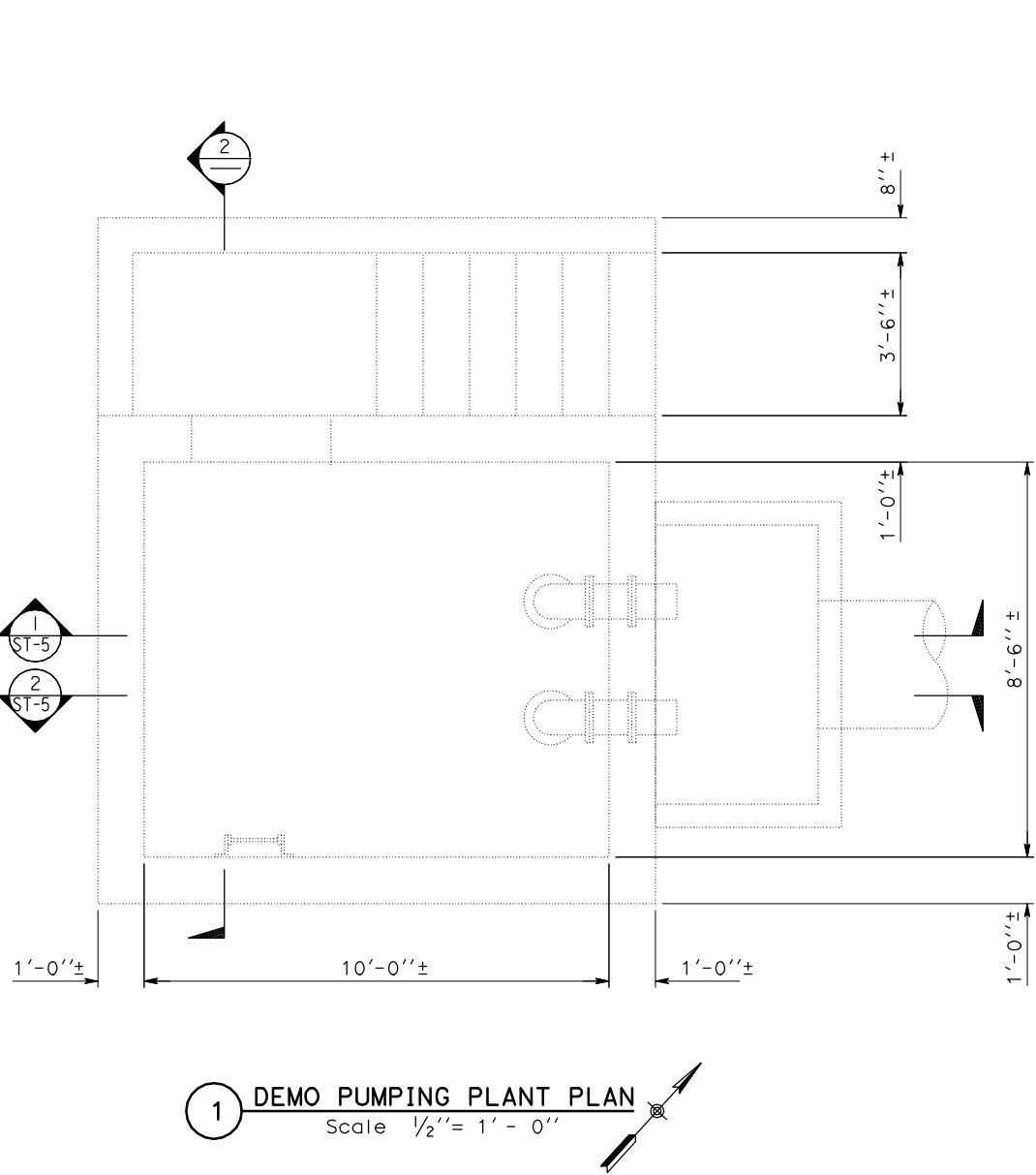
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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY



NOTE:
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controlling field dimensions
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any material.

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DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat
QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong

STATE OF
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DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ARCHITECTURAL
AND
STRUCTURAL DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
EXISTING PUMPING PLANT
PLAN & DEMO SECTION

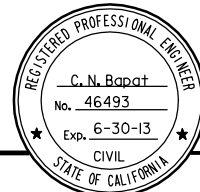
SHEET
ST-4

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

N. Bahat
REGISTERED CIVIL ENGINEER

05-29-12

DATE



PLANS APPROVAL DATE

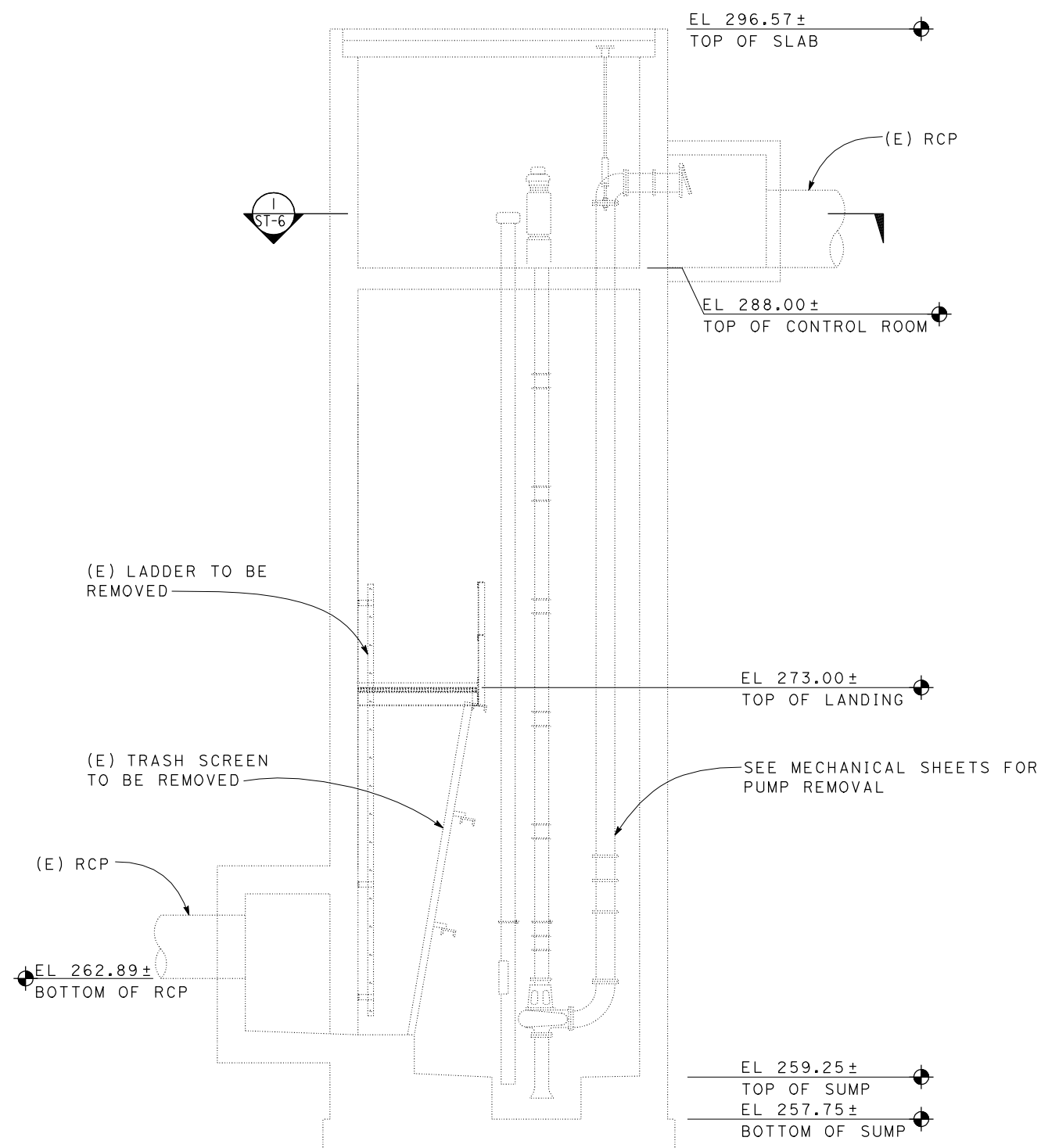
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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

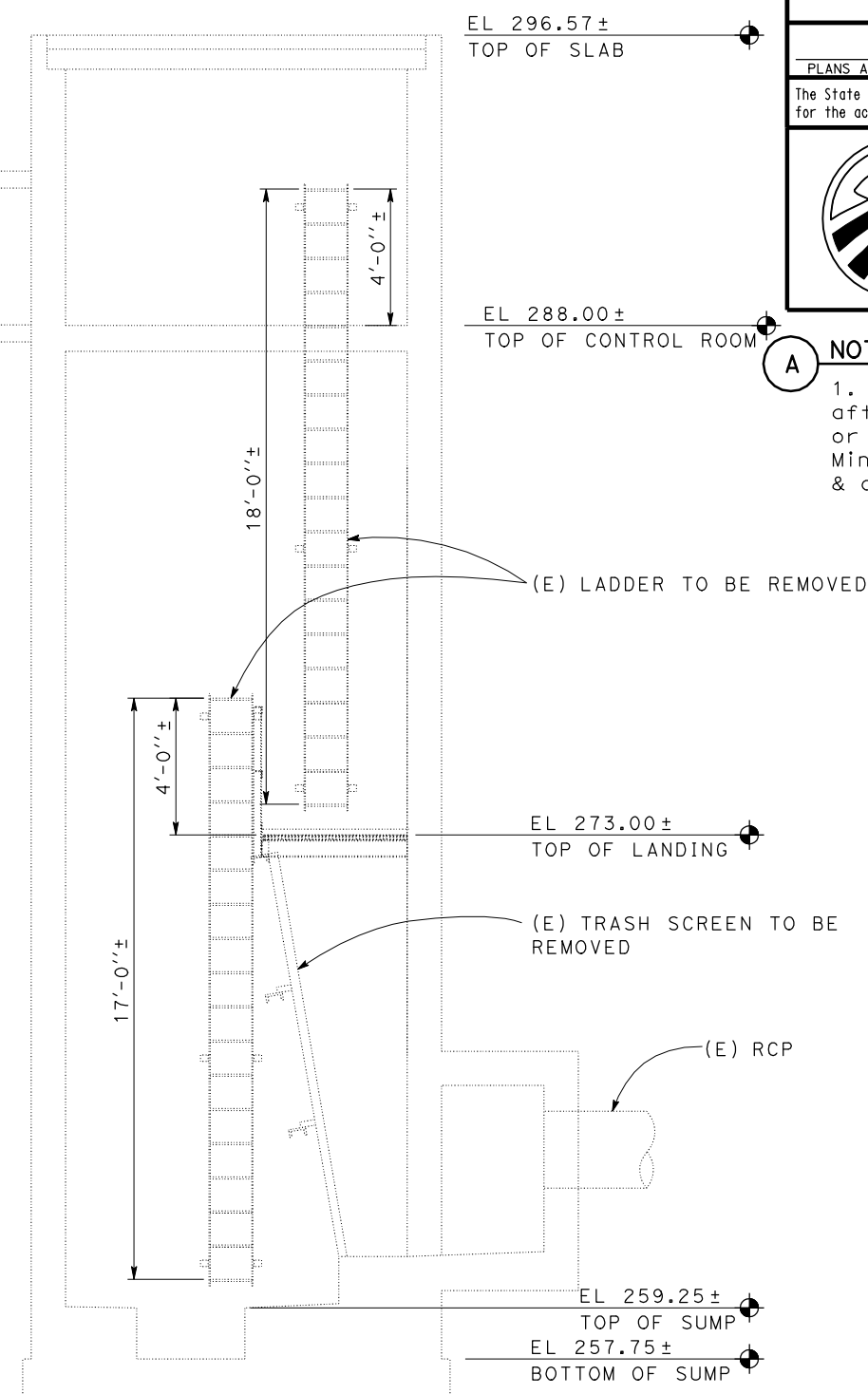
NOTE:

1. All Exposed Rebars/MEA after the removal of any items or (E) Conc Slab shall be burned Min 1½" into the (E) Conc surface & capped with Mortar, Typ



NOTE:
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controlling field dimensions
before ordering or fabricating
any material.

1 DEMO PUMPING PLANT SECTION
Scale $\frac{3}{8}'' = 1' - 0''$



2 DEMO PUMPING PLANT SECTION
Scale $\frac{3}{8}'' = 1' - 0''$

				DESIGN	BY Chandra Bapat	CHECKED Thomas Tong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ARCHITECTURAL AND STRUCTURAL DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT			SHEET ST-5							
				DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat			POST MILE	PUMPING PLANT RETROFIT	DEMO PUMPING PLANT SECTIONS									
				QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong														
TAEMWW Imperial Rev. 7/10				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0	1	2	3	UNIT PROJECT NUMBER & PHASE		3581 06120002391	CHSTP CONTRACT NO.		REVISION DATES (PRELIMINARY STAGE ONLY) DISREGARD PRINTS BEARING EARLIER REVISION DATES → 05-21-12 05-24-12 05-25-12 05-29-12		SHEET	OF	
EA 2HT20X																			P:\dist_06\0612000239_hsr_a_fresno_st_pp_retrofit\expedit\struc\retrofit\struc\PDF\st_05.dgn	

DIST.06COUNTYFreROUTEPOST MILESTOTAL PROJECT06SHEET NO.06TOTAL SHEETS06

C. N. Bapat

REGISTERED CIVIL ENGINEER

05-29-12

DATE

REGISTERED PROFESSIONAL ENGINEER

C. N. Bapat

No. 46493


Exp. 6-30-13

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STATE OF CALIFORNIA

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

A

NOTE:

1. All Exposed Rebars/MEA after the removal of any items or (E) Conc Slab shall be burned Min 1½'' into the (E) Conc surface & capped with Mortar, Typ

Diagram showing the layout of the Control Room Demo Plan. The plan includes a central area with dimensions 3'-5½'' and 2'-3''±. A ½'' deep sawcut for concrete floor removal is indicated. Annotations include: "REPLACE (E) PLATE WITH GRATE. SEE 1 ST-8" and "SEE MECHANICAL SHEETS FOR ADDITIONAL INFO." and "REMOVE GRATE AND SUPPORT SEE 1 ST-8".

1

CONTROL ROOM DEMO PLAN

Scale ¾''= 1' - 0''

NOTE:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN	BY Chandra Bapat	CHECKED Thomas Tong
DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat
QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong

STATE OF
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DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ARCHITECTURAL
AND
STRUCTURAL DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT

CONTROL ROOM DEMO PLAN

SHEET
ST-6

TAEMWW Imperial Rev. 7/10

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

0123

UNIT3581
PROJECT NUMBER & PHASE06120002391

EA 2HT20X

CHSTP CONTRACT NO.

REVISION DATES (PRELIMINARY STAGE ONLY)

DISREGARD PRINTS BEARING
EARLIER REVISION DATES → 05-10-1205-21-1205-24-1205-29-12

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

C. N. Bapat
REGISTERED CIVIL ENGINEER

05-29-12
DATE

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No. 46493


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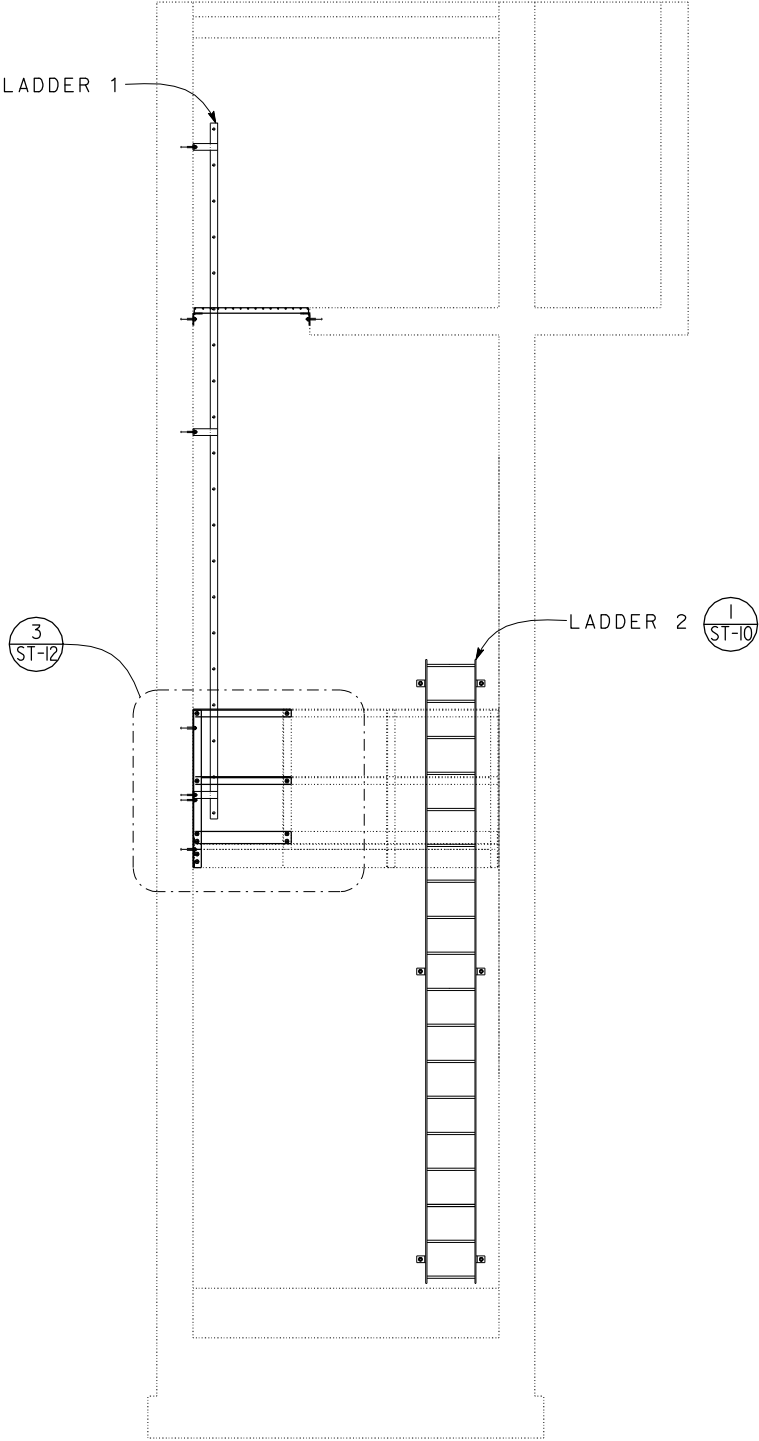
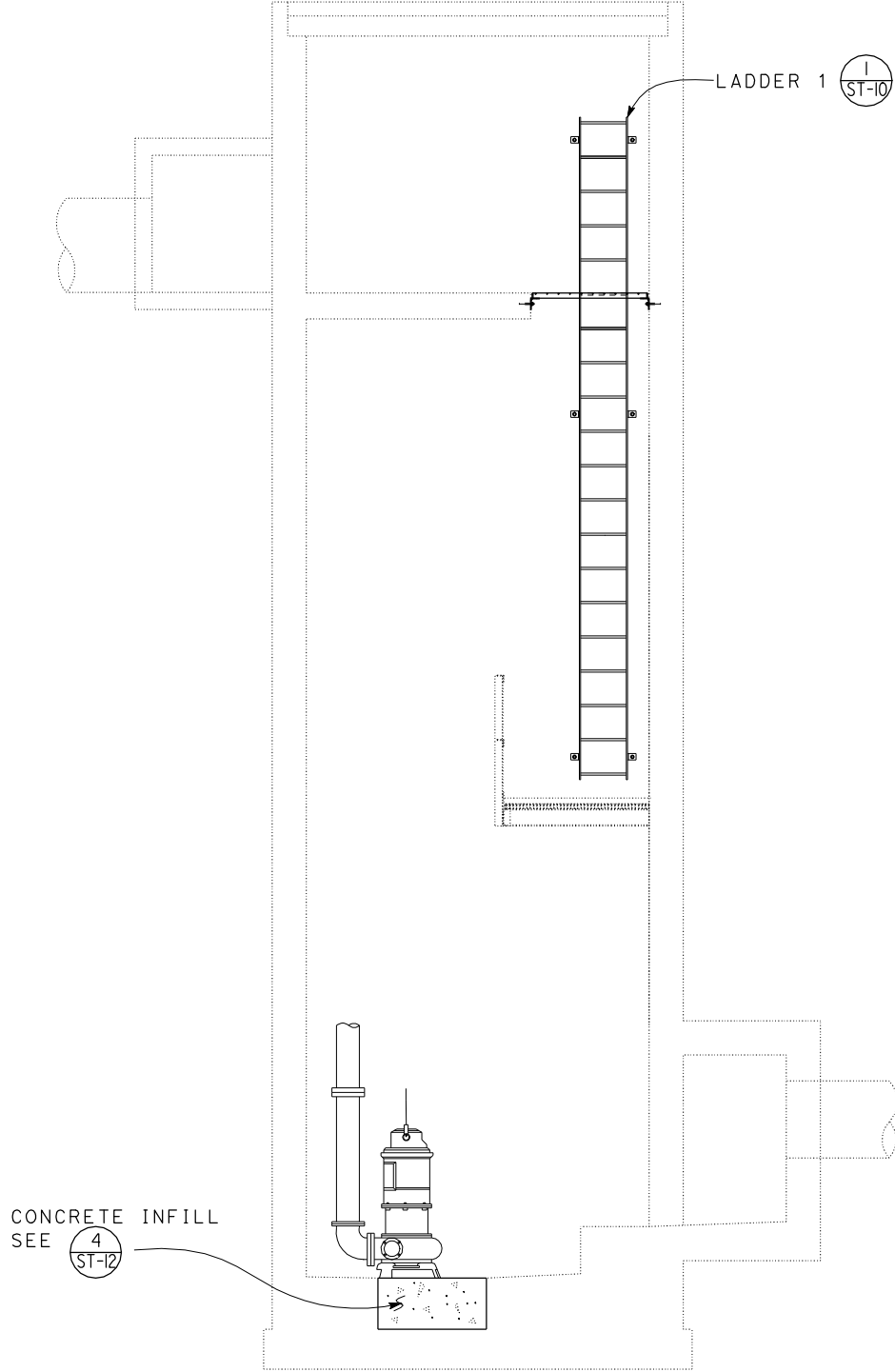
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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY



NOTE:
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controlling field dimensions
before ordering or fabricating
any material.

1 DEMO PUMPING PLANT SECTION
Scale $\frac{3}{8}'' = 1' - 0''$

NOTE:
Landing Grate Modified
Plan See **ST-9**

2 DEMO PUMPING PLANT SECTION
Scale $\frac{3}{8}'' = 1' - 0''$

DESIGN	BY Chandra Bapat	CHECKED Thomas Tong
DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat
QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong

STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ARCHITECTURAL
AND
STRUCTURAL DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
PUMPING PLANT SECTION

SHEET
ST-7

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER

05-29-12
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No. 46493


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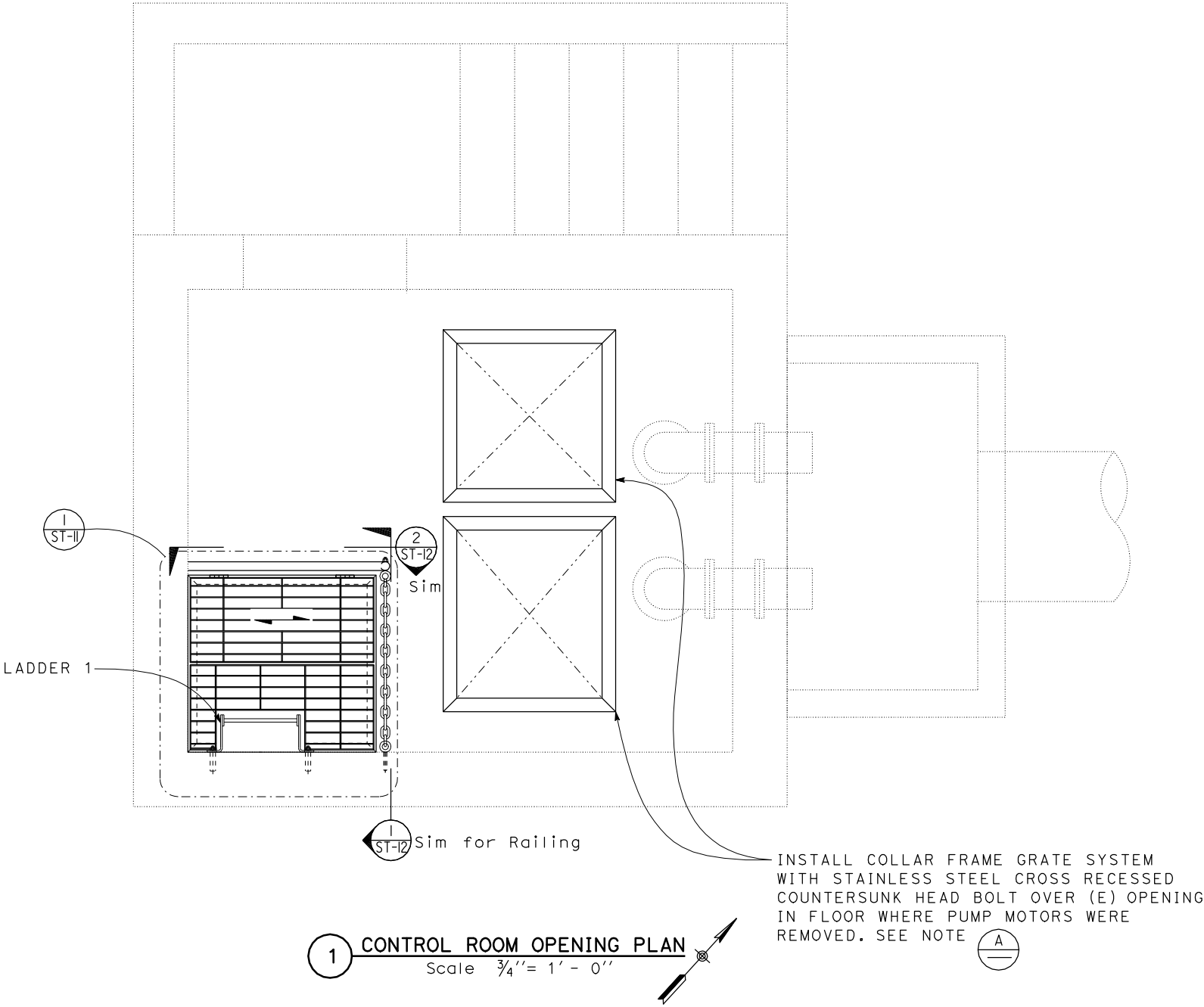
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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

A DESIGN NOTES:

1. Contractor Shall Submit Complete Working Drawings, Erection Instruction & Drawings, With Design Calculations and Loads Per 2010 California Building Code.
2. Working Drawings, Erection Drawings & Design Calculations Shall Be Wet Stamped & Signed By a Registered Civil or Structural Engineer in the State of California, the Expiration Date of the Engineer Registration Stamp Shall Be Shown.



NOTE:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN	BY Chandra Bapat	CHECKED Thomas Tong
DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat
QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong

STATE OF
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ARCHITECTURAL
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BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
CONTROL ROOM OPENING PLAN

SHEET
ST-8

TAEMWW Imperial Rev. 7/10

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

0 1 2 3

UNIT 3581
PROJECT NUMBER & PHASE 06120002391
EA 2HT20X

CHSTP CONTRACT NO.

REVISION DATES (PRELIMINARY STAGE ONLY)
DISREGARD PRINTS BEARING
EARLIER REVISION DATES

05-21-12 05-23-12 05-24-12 05-29-12

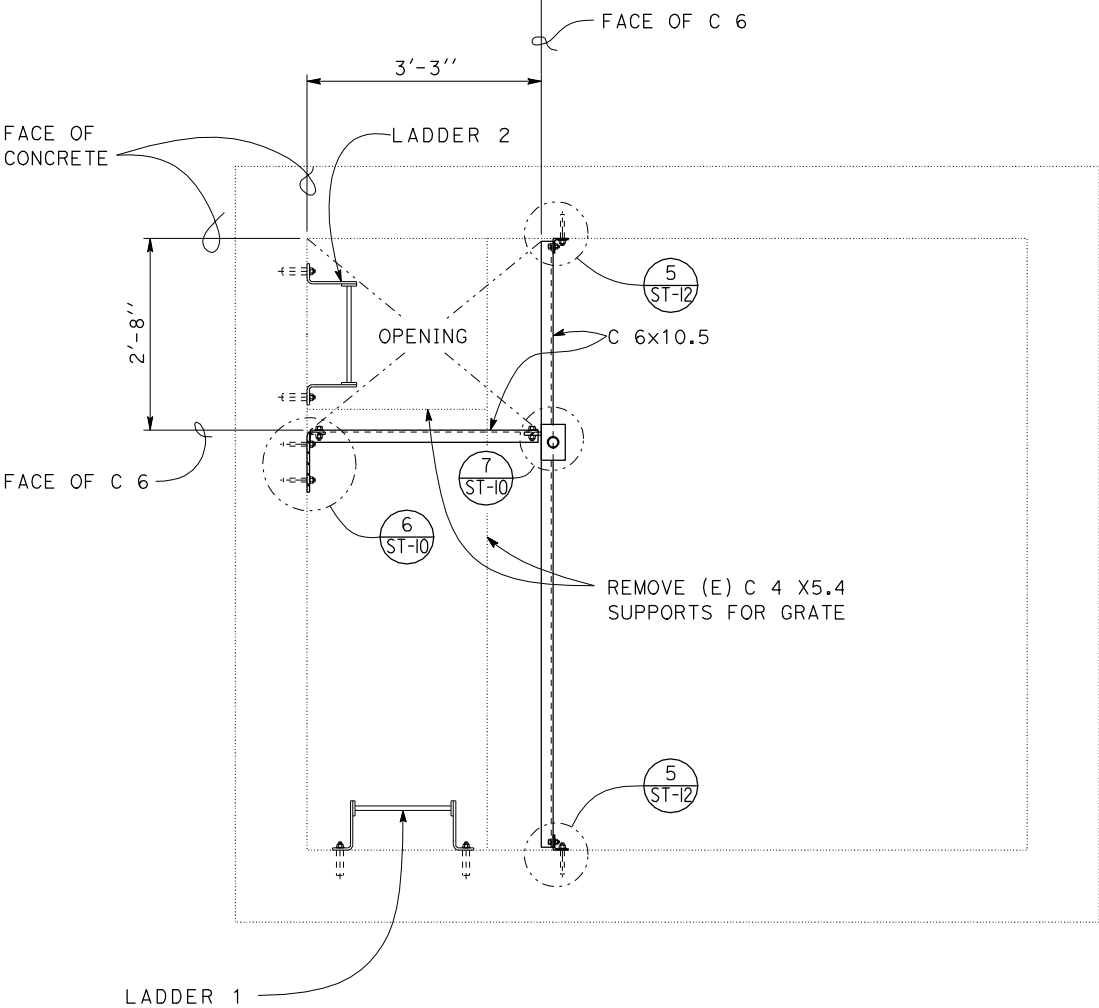
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OF

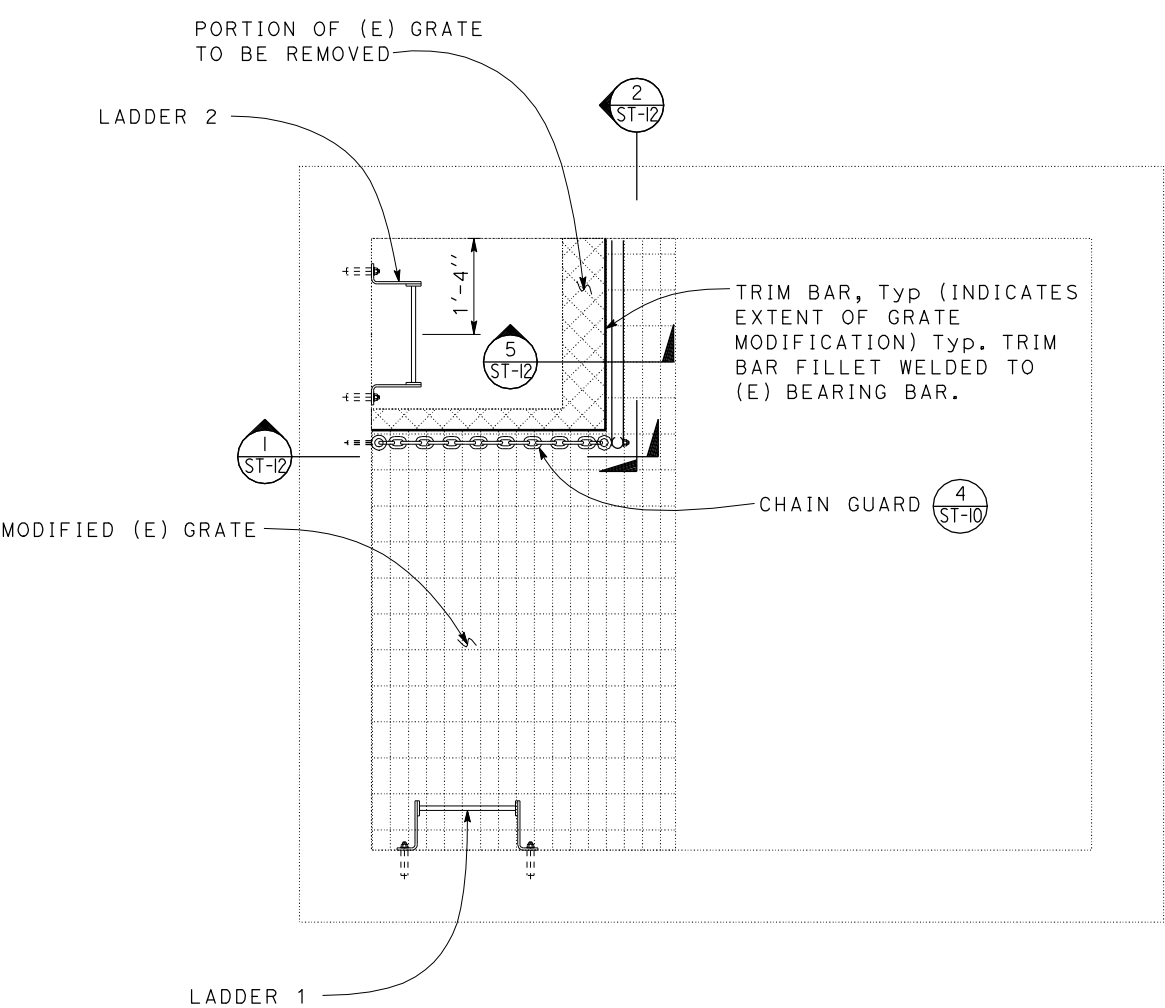
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1 (E) LANDING GRATE SUPPORT MODIFIED PLAN
Scale 3/4" = 1' - 0"



2 (E) LANDING GRATE MODIFIED PLAN
Scale 3/4" = 1' - 0"

NOTE:
The Contractor shall verify all
controlling field dimensions
before ordering or fabricating
any material.

DESIGN	BY Chandra Bapat	CHECKED Thomas Tong
DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat
QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong

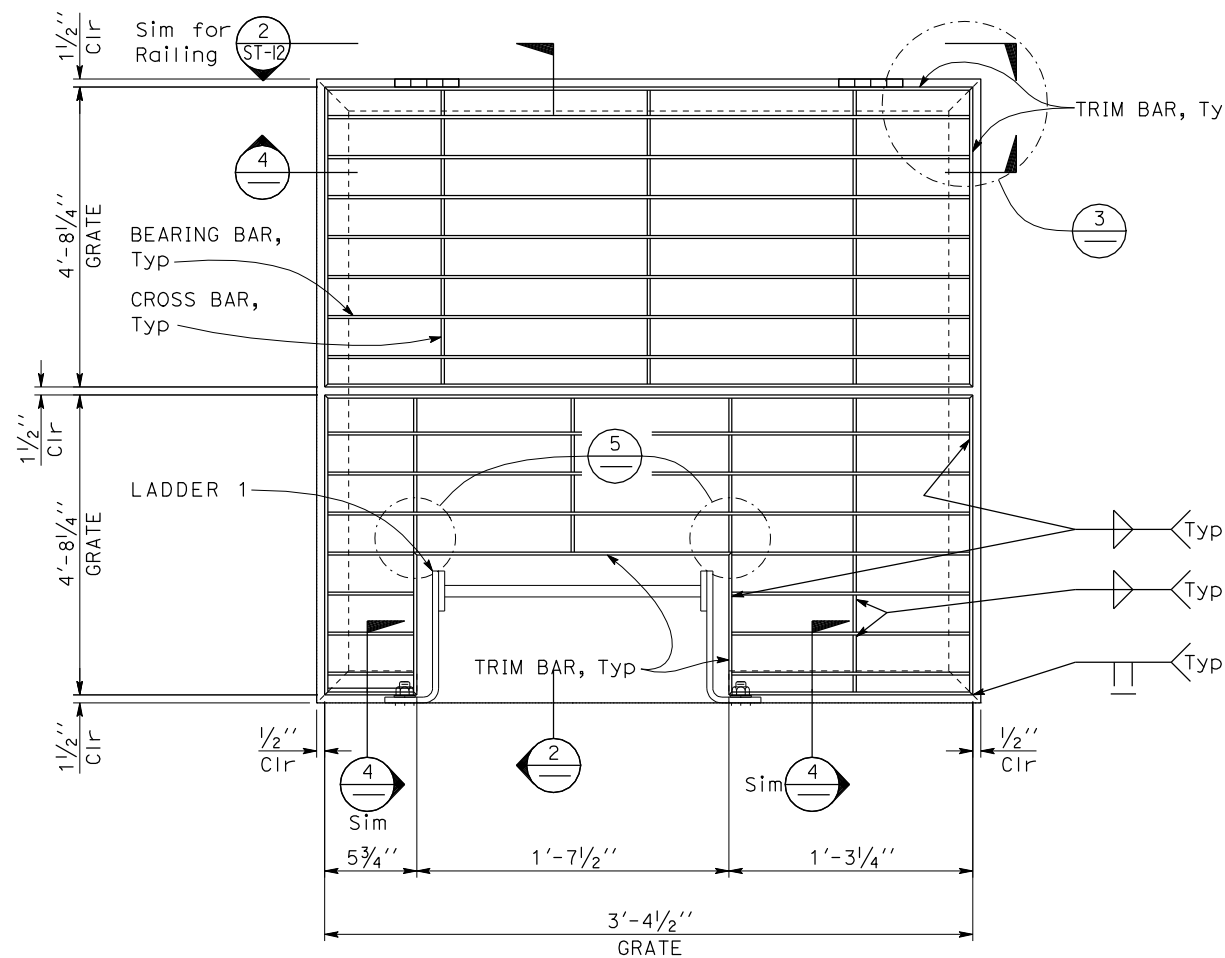
STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ARCHITECTURAL
AND
STRUCTURAL DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
LANDING GRATE PLAN

SHEET
ST-9

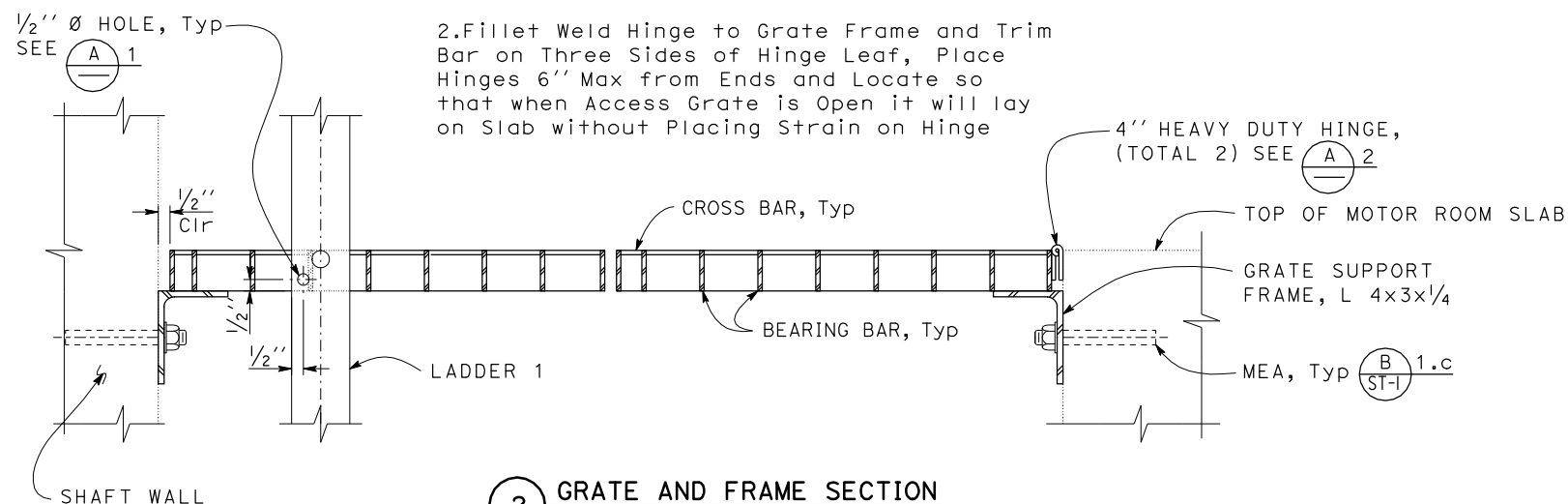


1 ACCESS GRATE DETAIL
Scale 2" = 1' - 0"

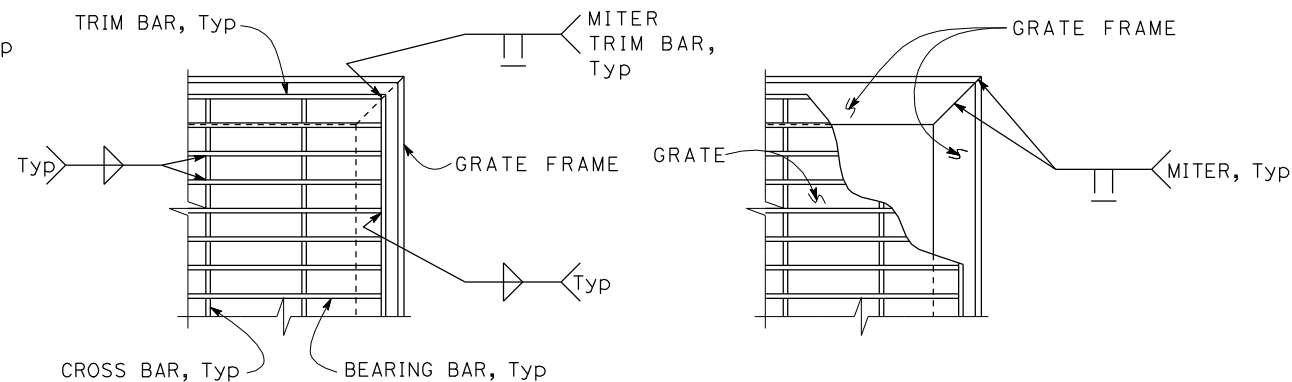
A NOTES:

1. Provide 1/2" Ø Aligned Hole in Access Grate Trim Bar and Ladder Rail for Padlock.

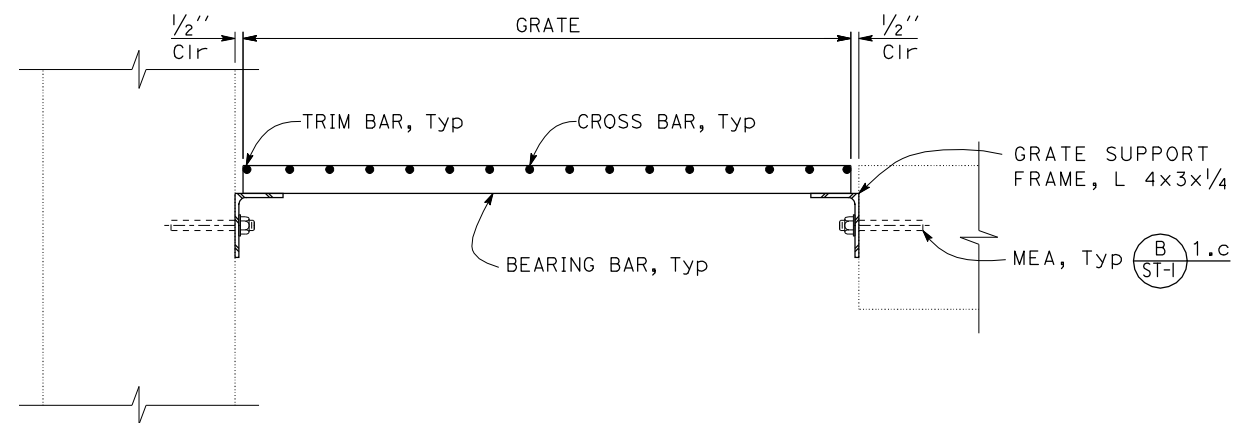
2. Fillet Weld Hinge to Grate Frame and Trim Bar on Three Sides of Hinge Leaf, Place Hinges 6" Max from Ends and Locate so that when Access Grate is Open it will lay on Slab without Placing Strain on Hinge



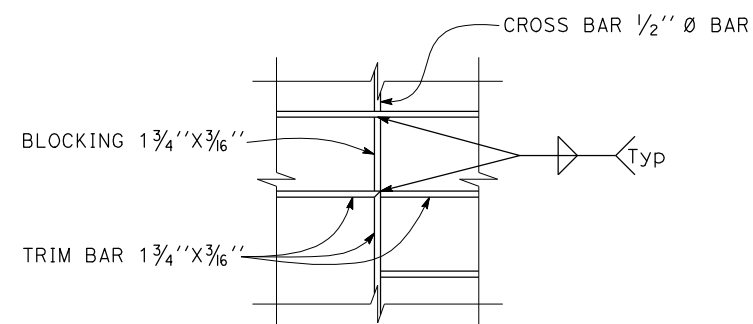
2 GRATE AND FRAME SECTION
Scale 3" = 1' - 0"



3 GRATE AND FRAME DETAILS
Scale 3" = 1' - 0"



4 GRATE AND FRAME SECTION
Scale 2" = 1' - 0"



5 GRATE DETAIL
Scale 4" = 1' - 0"

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

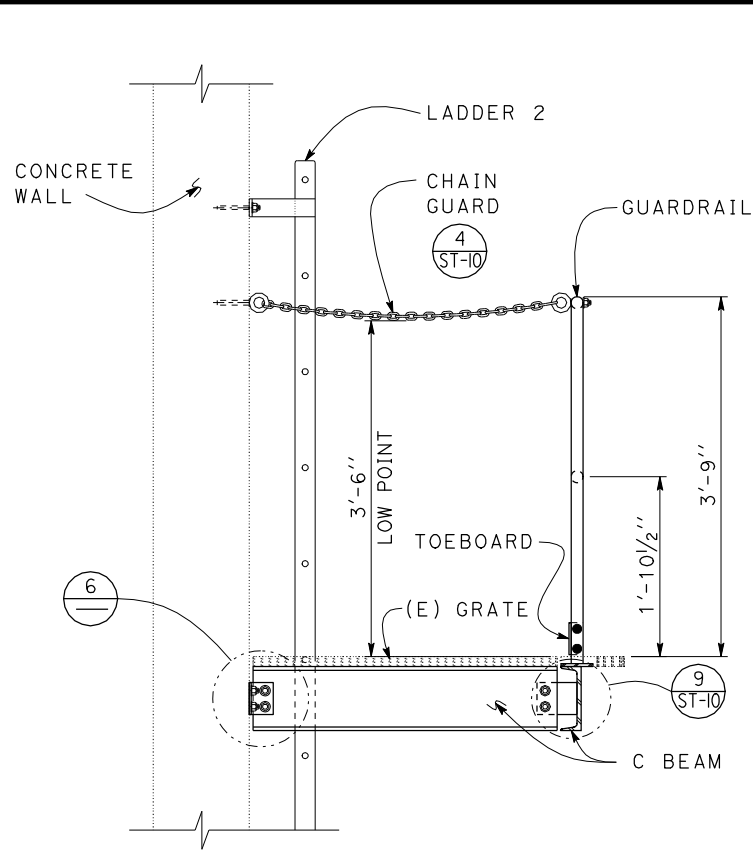
C. N. Bapat
 REGISTERED CIVIL ENGINEER
 DATE 05-29-12
 No. 46493
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE

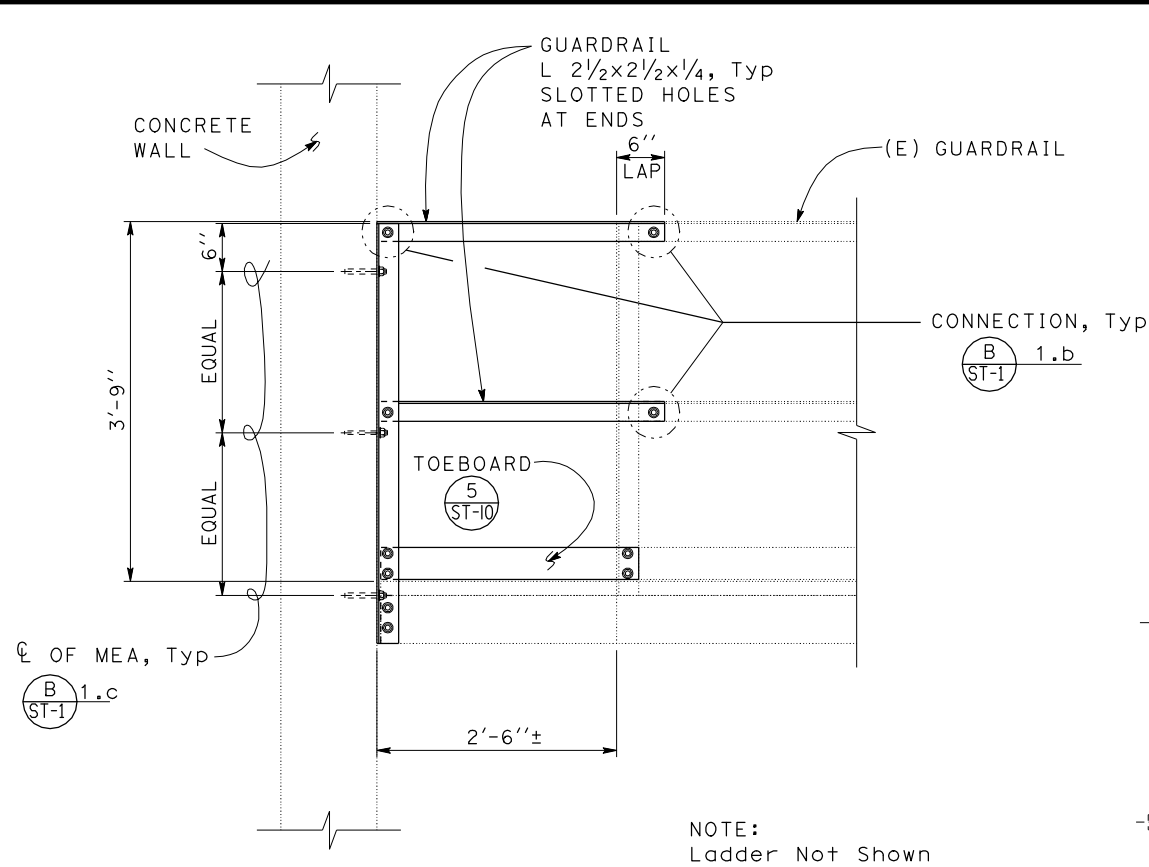
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CALIFORNIA
 HIGH-SPEED RAIL AUTHORITY

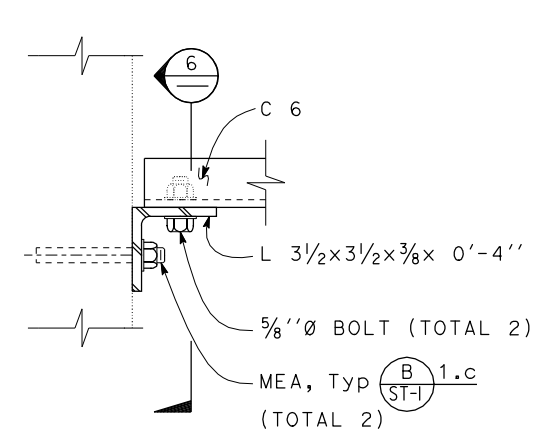
	DESIGN	BY Chandra Bapat	CHECKED Thomas Tong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ARCHITECTURAL AND STRUCTURAL DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT		SHEET ST-11				
	DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat			POST MILE	PUMPING PLANT RETROFIT	MOTOR ROOM ACCESS GRATE DETAILS					
	QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong										
TAEMWW Imperial Rev. 7/10			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3	UNIT PROJECT NUMBER & PHASE	3581 06120002391	CHSTP CONTRACT NO.		REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET	OF
						EA 2HT20X		DISREGARD PRINTS BEARING EARLIER REVISION DATES → 05-16-12/05-28-12/05-29-12					
P:\dist 06\0612000239 hsr rail\expedite\structure\PDF\st 11.dgn													



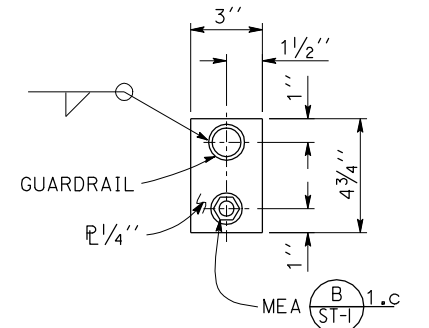
1 CHAIN GUARD CONNECTION
Scale 1" = 1' - 0"



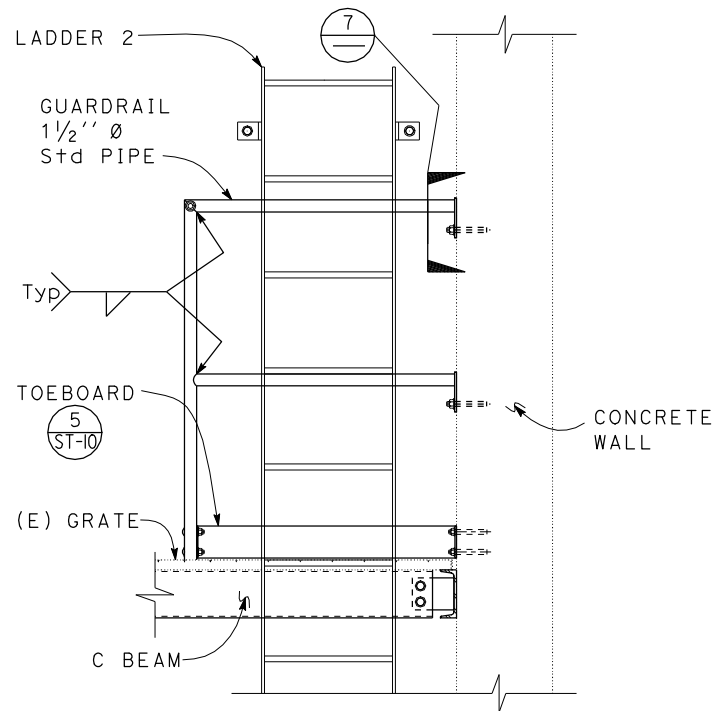
3 LANDING GUARDRAIL ELEVATION
Scale 1" = 1' - 0"



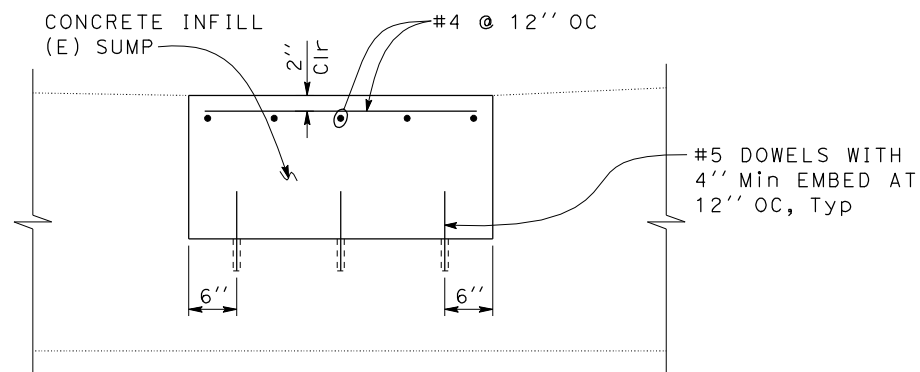
5 GUARDRAIL POST TO WALL AND C6
Scale 3" = 1' - 0"



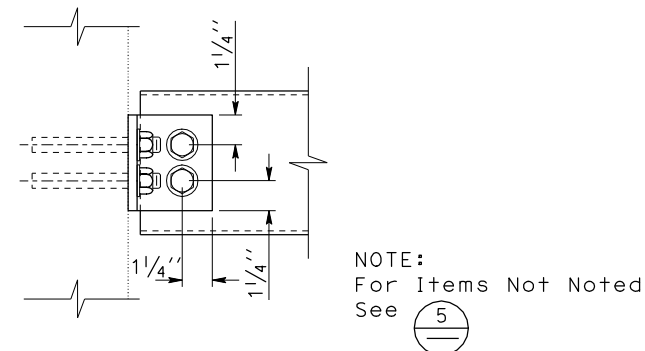
7 RAIL TO WALL CONNECTION
Scale 3" = 1' - 0"



2 GUARDRAIL CONNECTION
Scale 1" = 1' - 0"



4 CONCRETE INFILL AT SUMP
Scale 1" = 1' - 0"



6 GUARDRAIL POST TO WALL AND C6
Scale 3" = 1' - 0"

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

Registered Professional Engineer
 C. N. Bapat
 No. 46493
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA

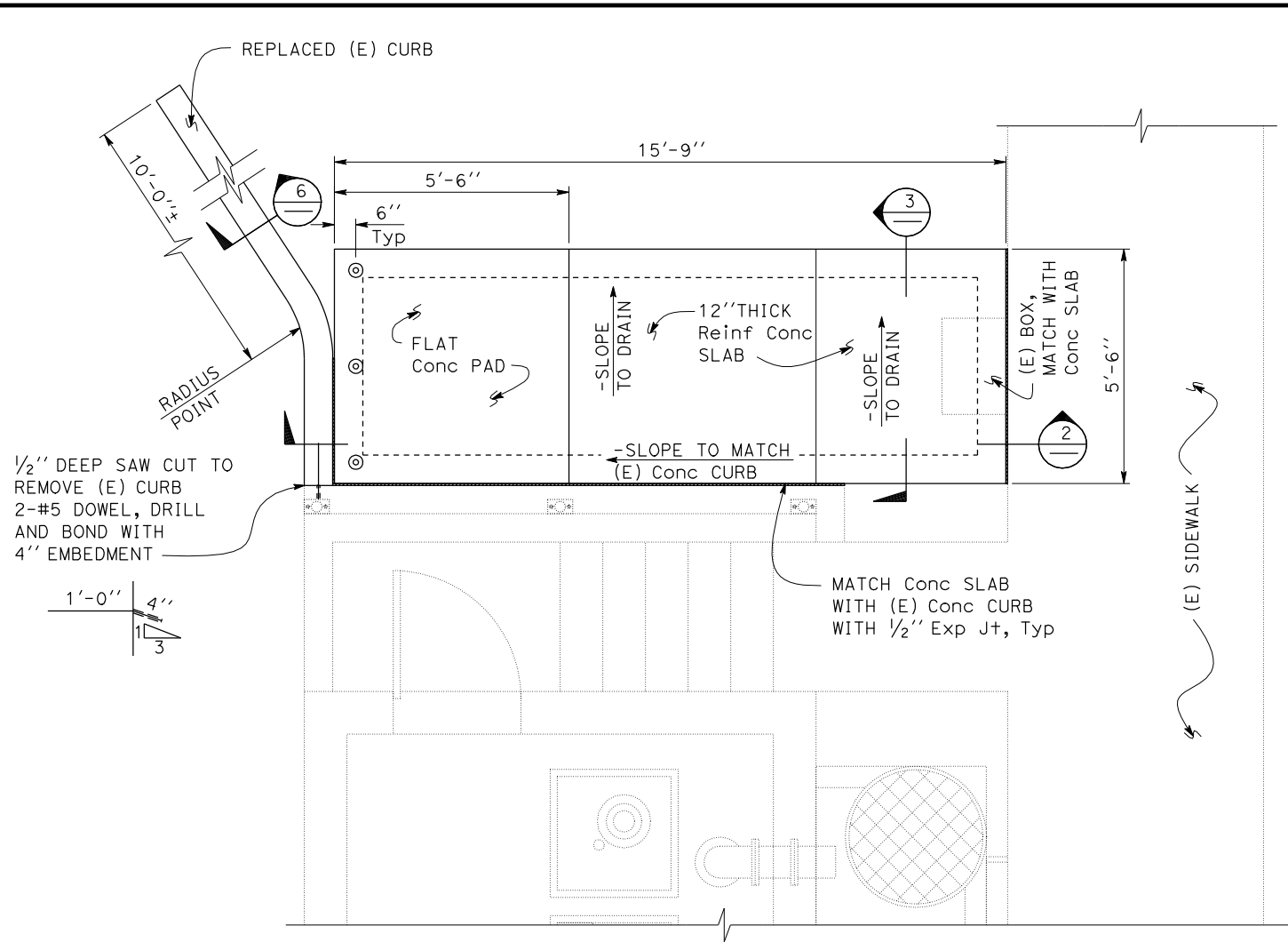
PLANS APPROVAL DATE
 05-29-12
 DATE

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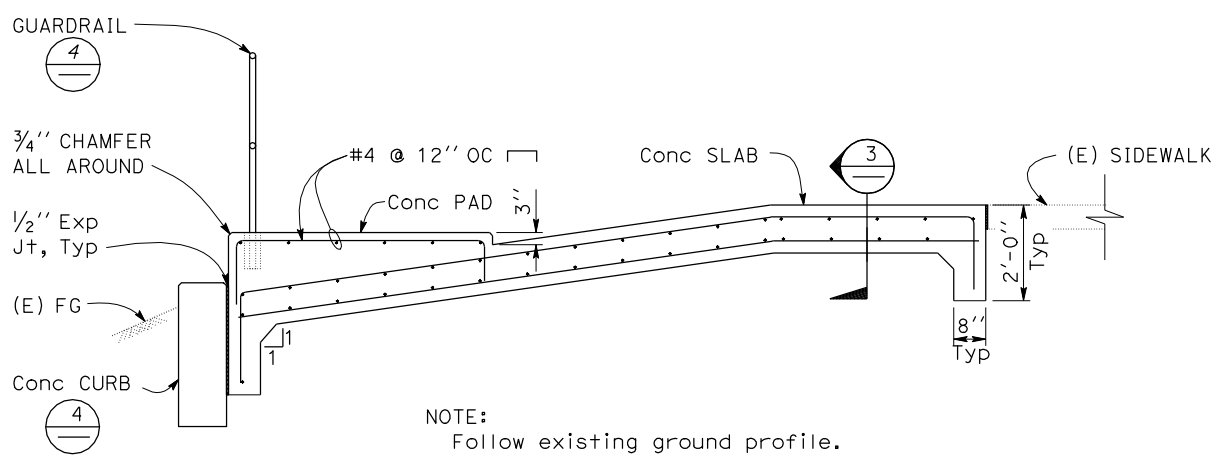
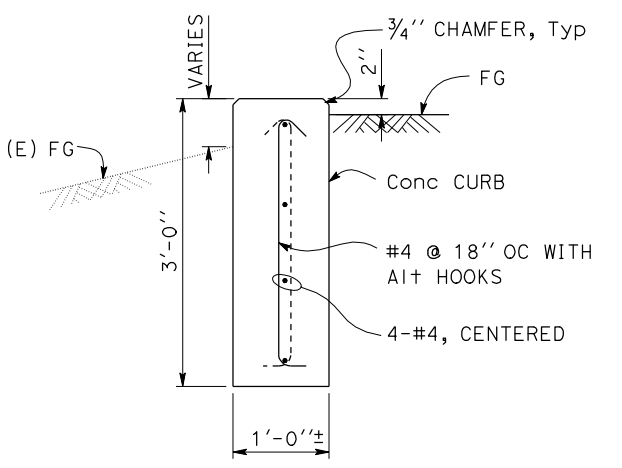
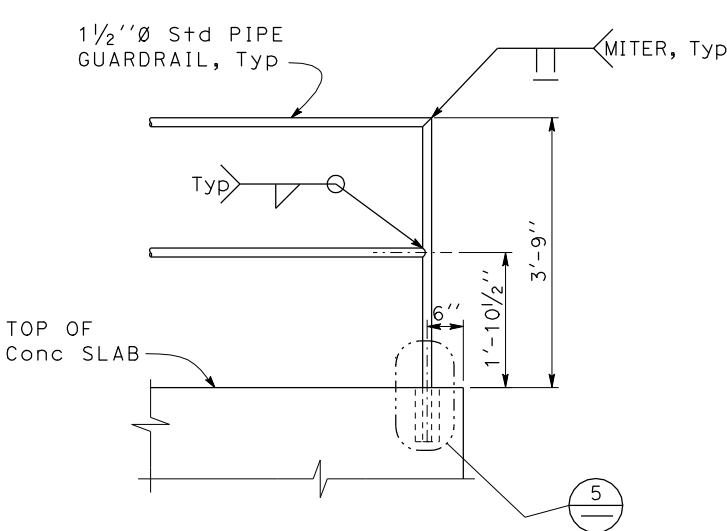
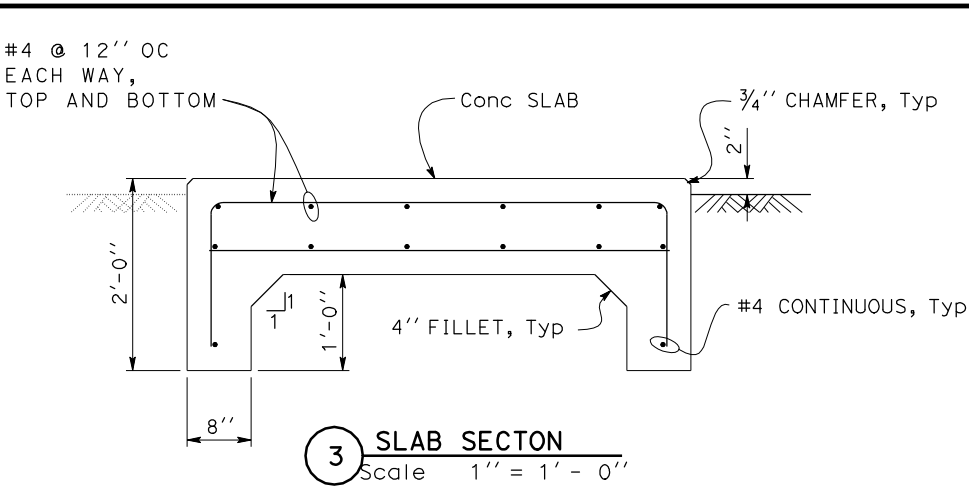
CALIFORNIA
 HIGH-SPEED RAIL AUTHORITY

DESIGN BY Chandra Bapat CHECKED Thomas Tong DETAILS BY Daniel Harakh CHECKED Chandra Bapat QUANTITIES BY Chandra Bapat CHECKED Thomas Tong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ARCHITECTURAL AND STRUCTURAL DESIGN	BRIDGE NO. POST MILE	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT		SHEET ST-12			
				MISCELLANEOUS DETAILS I					
				CHSTP CONTRACT NO. PUMPING PLANT RETROFIT					
TAEMWW Imperial Rev. 7/10		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT PROJECT NUMBER & PHASE 3581 06120002391		CHSTP CONTRACT NO. REVISION DATES (PRELIMINARY STAGE ONLY) DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET OF	

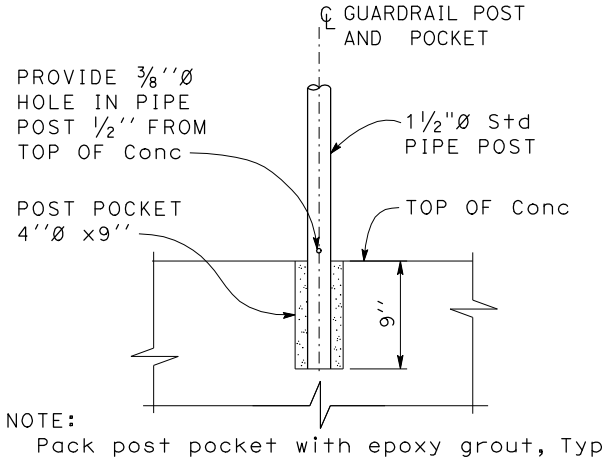
P:\dist_06\0612000239_hsr_fresno_st_pp_retrofit\expedit\struc\PDF\st_12.dgn



1 CONCRETE SLAB PLAN
Scale 1/2" = 1' - 0"



2 SLAB SECTION
Scale 1/2" = 1' - 0"



5 POST POCKET DETAIL
Scale 1 1/2" = 1' - 0"

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

REGISTERED CIVIL ENGINEER
C. N. Bapat
No. 46493
Exp. 6-30-13
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE
05-29-12

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DESIGN	BY Chandra Bapat	CHECKED Thomas Tong
DETAILS	BY Daniel Harakh	CHECKED Chandra Bapat
QUANTITIES	BY Chandra Bapat	CHECKED Thomas Tong

STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ARCHITECTURAL
AND
STRUCTURAL DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
MISCELLANEOUS DETAILS 2

SHEET
ST-13

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				


Michael R. White
REGISTERED MECHANICAL ENGINEER

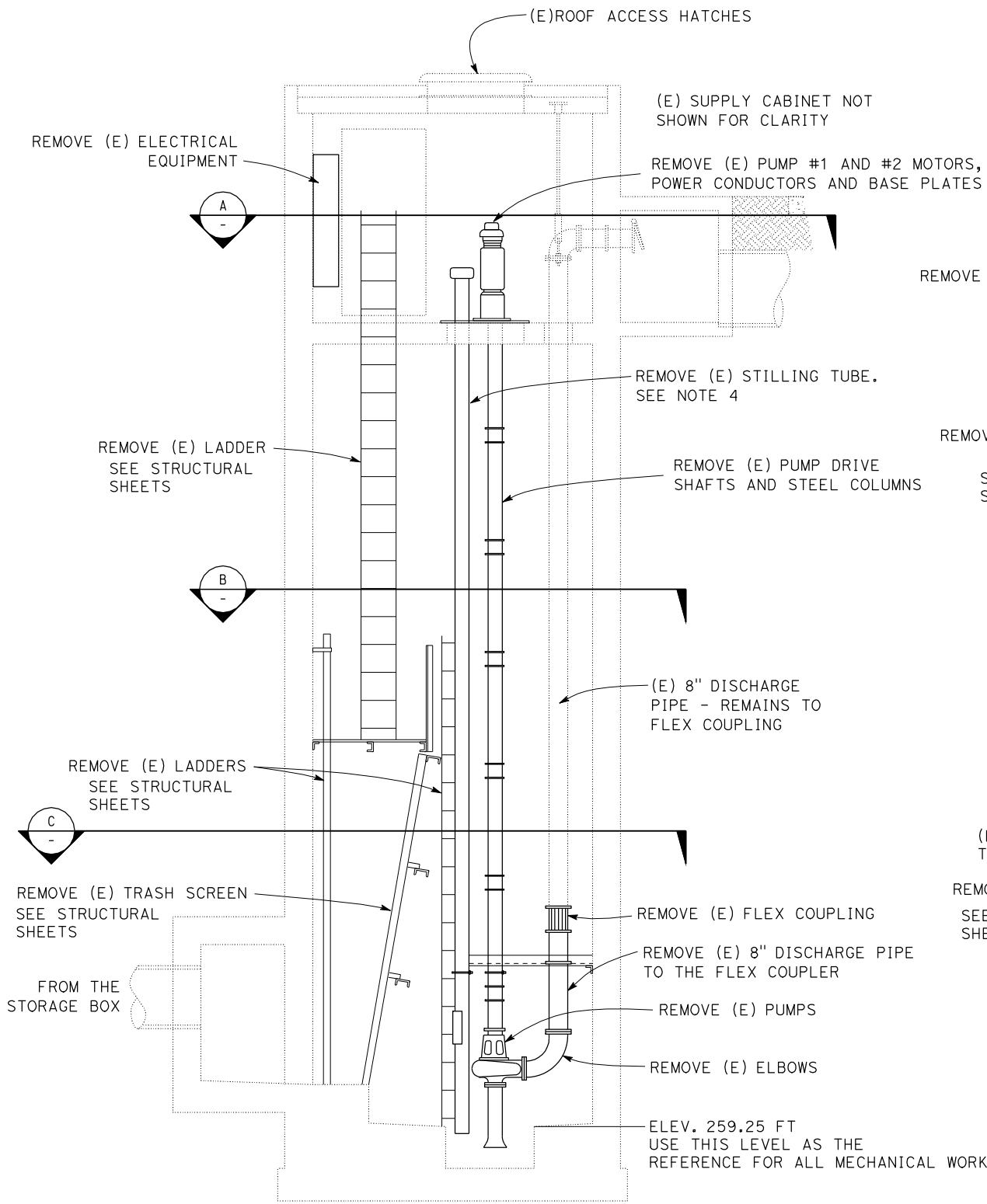
5/29/2012
DATE

Michael R. White
No. M29108
Exp 6/30/2014
MECH
STATE OF CALIFORNIA

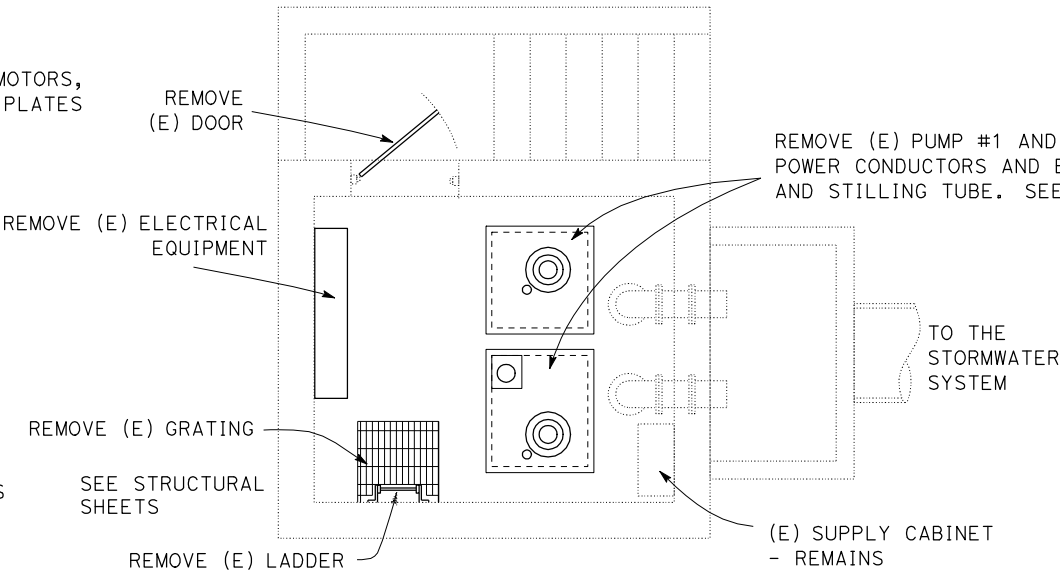
PLANS APPROVAL DATE _____

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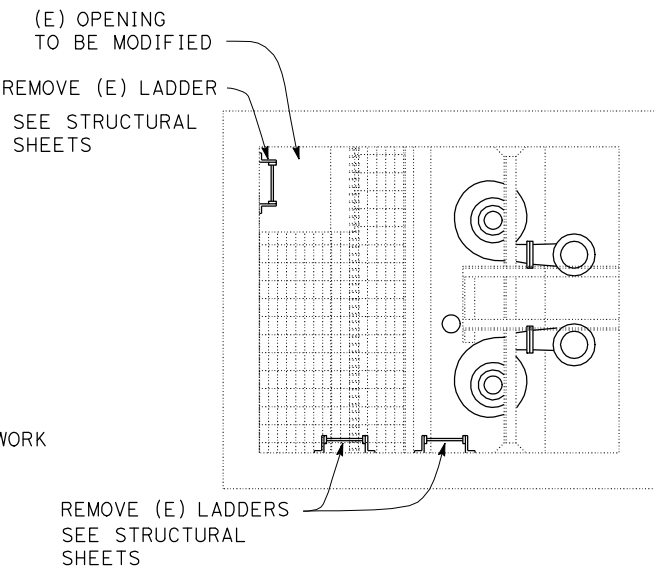
**CALIFORNIA**
HIGH-SPEED RAIL AUTHORITY



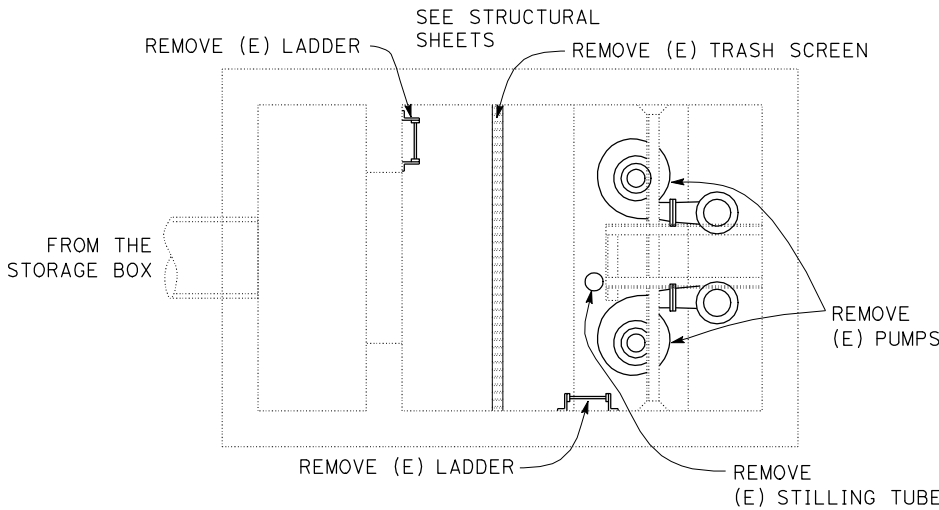
SECTION
 $\frac{3}{8}" = 1'-0"$



A MOTOR ROOM PLAN
 $\frac{3}{8}" = 1'-0"$



B LANDING PLAN
 $\frac{3}{8}" = 1'-0"$



C SUMP PLAN
 $\frac{3}{8}" = 1'-0"$

- NOTES:
1. The Contractor shall field verify all existing structures and equipment.
 2. Remove items indicated on this sheet.
 3. After removal of the steel motor plates, scrape any existing leveling grout off to provide a clean and level surface. Salvage existing pump shaft bearing solenoid-operated oil lubricators as directed by the Engineer. Remove existing wires from the conduit that is cast in the concrete floor. Cut all ends of the conduit flush to the floor and plug with grout.
 4. Salvage existing electrodes & cables contained within the stilling tube as directed by the Engineer.

General Note:

The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

THIS DRAWING ACCURATE FOR MECHANICAL WORK ONLY.

DESIGN	BY <i>Michael R. White</i>	CHECKED <i>Alan M. Torres</i>
DETAILS	BY <i>Michael R. White</i>	CHECKED <i>Alan M. Torres</i>
QUANTITIES	BY <i>Michael R. White</i>	CHECKED <i>Alan M. Torres</i>

STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER
AND
WASTEWATER DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
EXISTING PUMP PLANT DETAILS

SHEET
M-1

DIST.06COUNTYFreROUTEPOST MILESTOTAL PROJECTSHEET NO.06TOTAL SHEETS

Michael R. White

REGISTERED MECHANICAL ENGINEER

5/29/2012

DATE

Michael R. White

No. M29108

Exp 6/30/2014

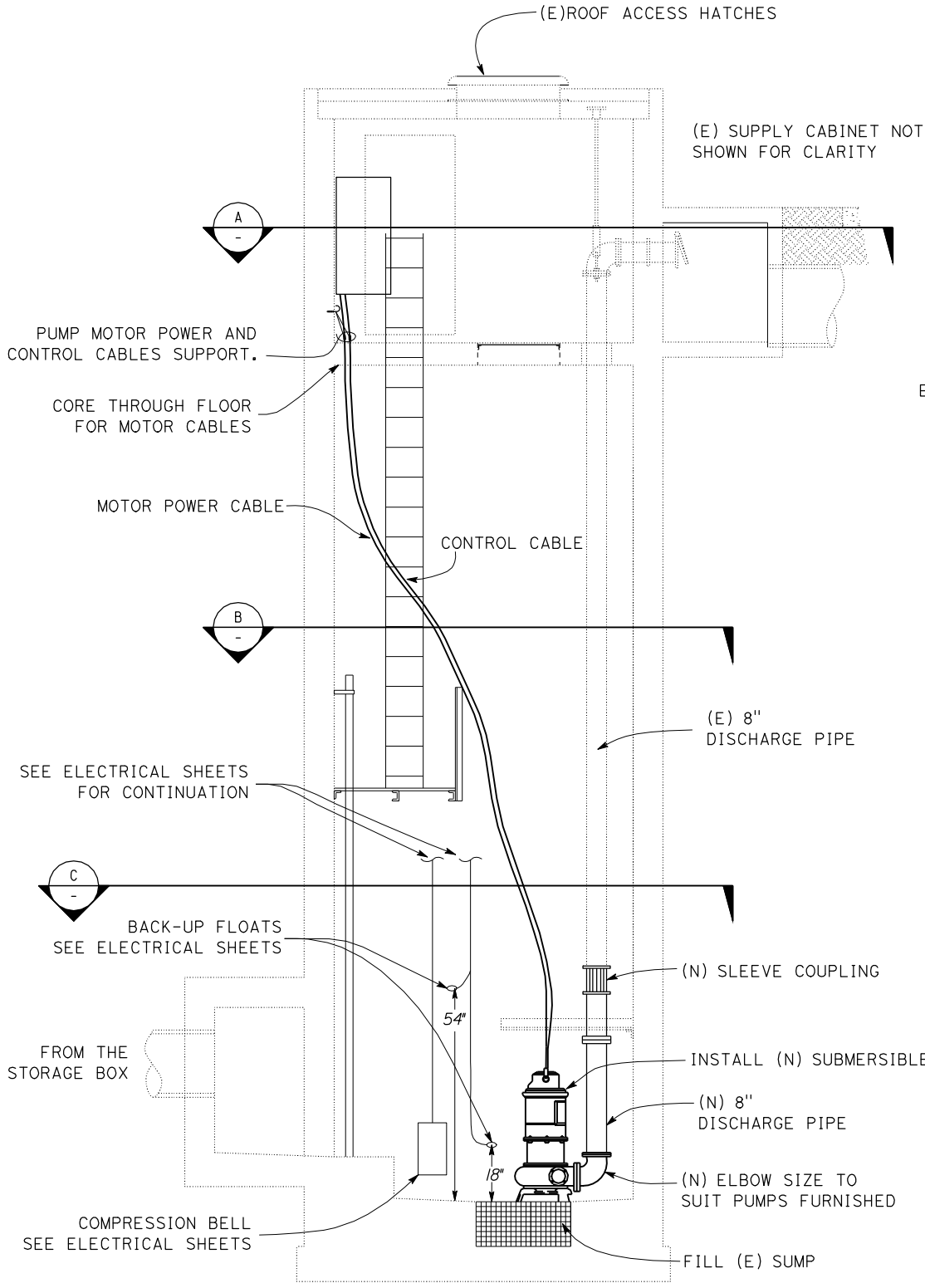
MECH

STATE OF CALIFORNIA

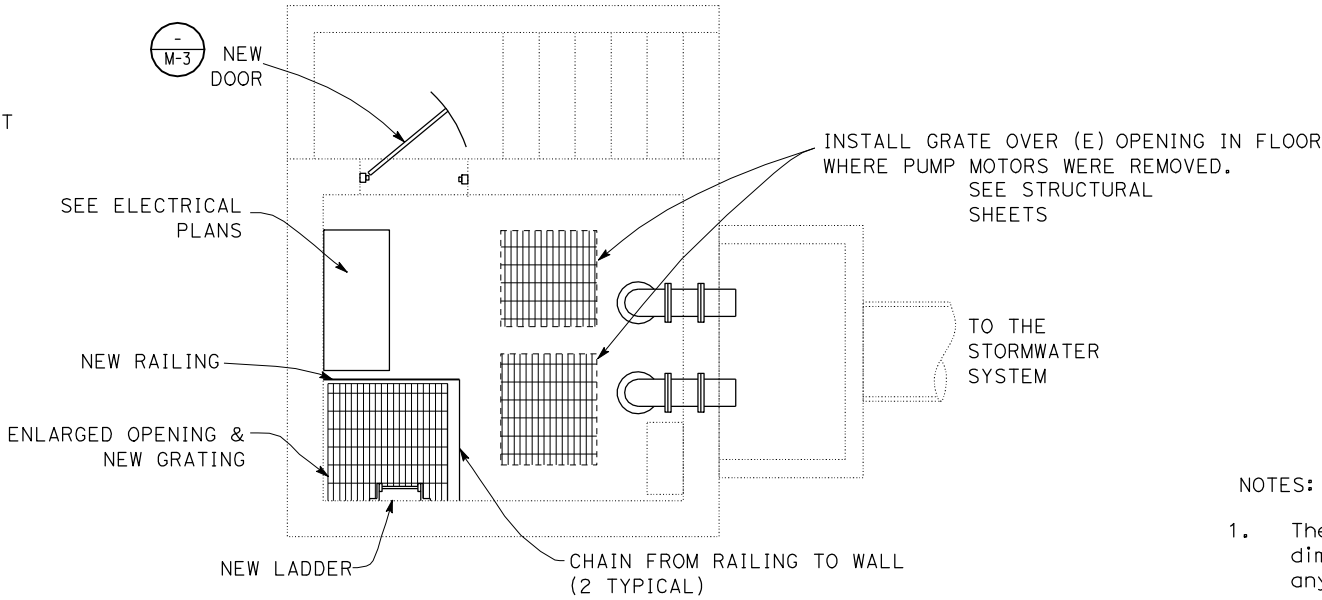
PLANS APPROVAL DATE

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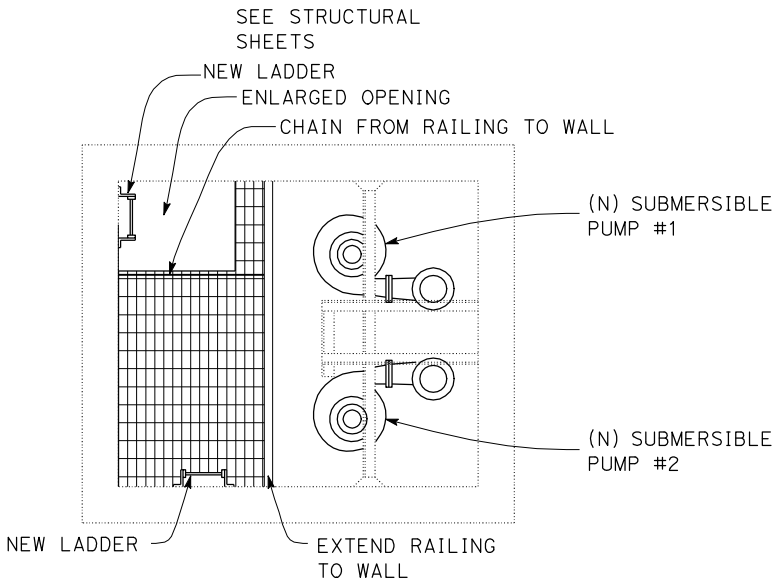
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY



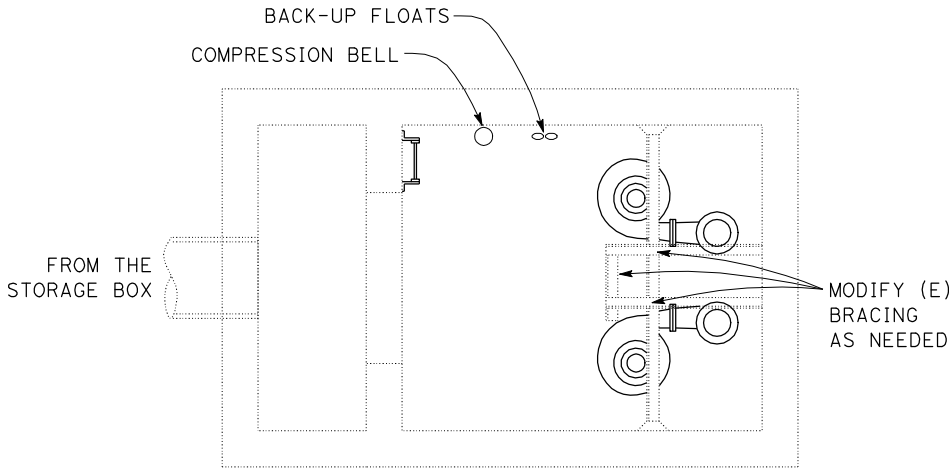
SECTION
3/8" = 1'-0"



A CONTROL ROOM PLAN
3/8" = 1'-0"



B LANDING PLAN
3/8" = 1'-0"



C SUMP PLAN
3/8" = 1'-0"

- NOTES:
- The Contractor shall verify all controlling field dimensions before ordering and or fabricating any material.
 - All ferrous parts of pipe shall be hot-dipped galvanized after fabricating.
 - All fasteners to concrete shall be expansion anchorage devices with stainless steel threaded stud, flat washer, lock washer, and hex nut.
 - The Contractor may use pumps with the same rotation except that any additional pipe modifications or bracing due to such a change shall be at the Contractor's expense.
 - The anchors for mounting the pumps shall be studs (external threads) and conform to Note 3 above. Follow the pump manufacturer's instructions for size and quantity.

DESIGN	BY Michael R. White	CHECKED Alan M. Torres
DETAILS	BY Michael R. White	CHECKED Alan M. Torres
QUANTITIES	BY Michael R. White	CHECKED Alan M. Torres

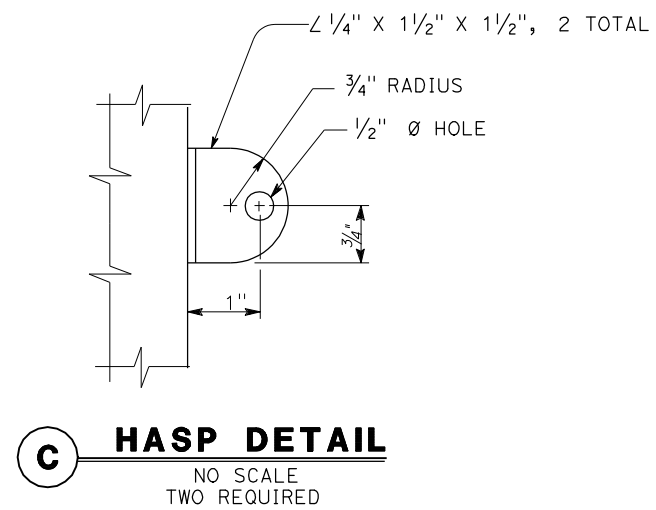
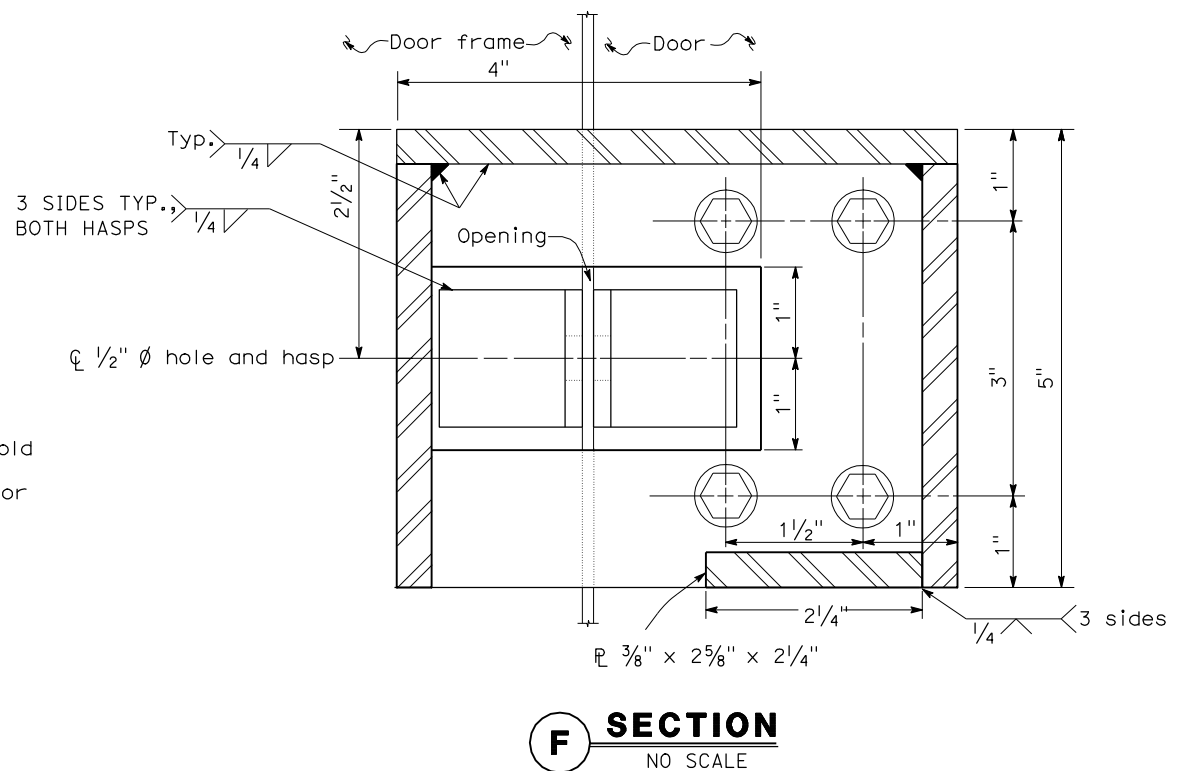
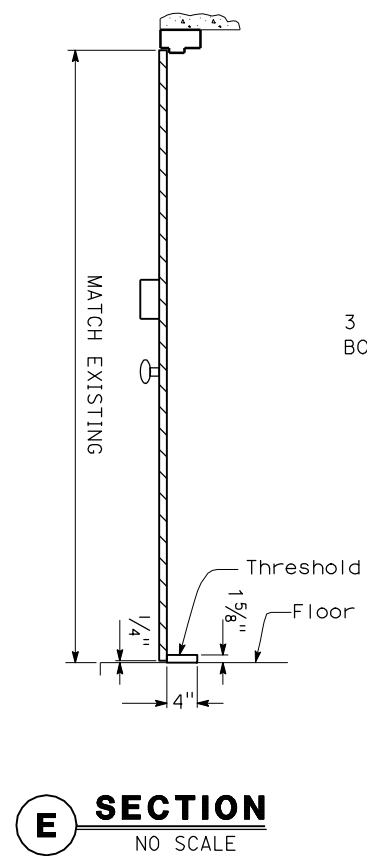
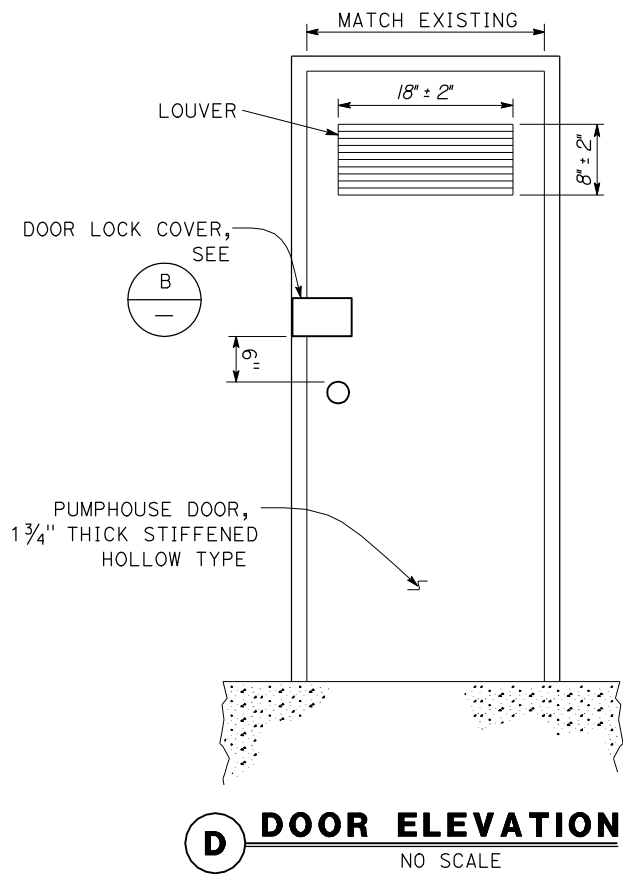
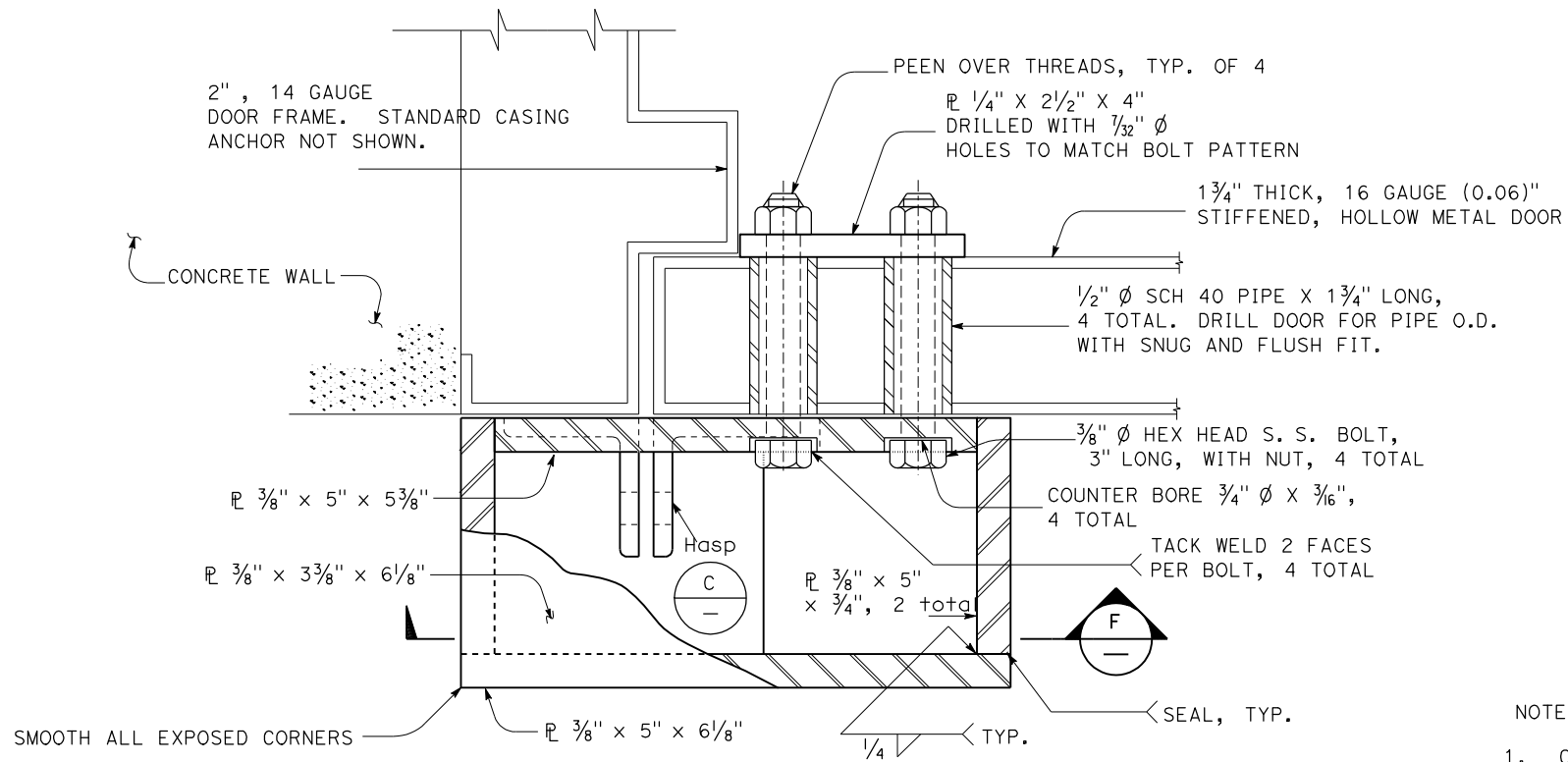
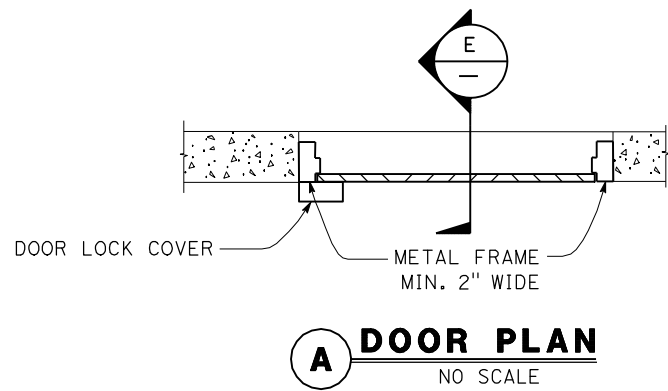
STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER
AND
WASTEWATER DESIGN

BRIDGE NO.
POST MILE

HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT
MODIFIED PUMP PLANT - GENERAL

SHEET
M-2



ALL DIMENSION IN INCHES UNLESS OTHERWISE NOTED
THIS DRAWING ACCURATE FOR MECHANICAL WORK ONLY

- NOTES:
- Completed door lock cover shall be primed and painted to match door finish.
 - The existing door frame is to remain. Replace the existing damaged door with a stiffened hollow-core, metal door. The new door shall have a louver in the top 1/3 section of the door with approximate dimensions of 18" wide x 8" high.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

Michael R. White
REGISTERED MECHANICAL ENGINEER
DATE 5/29/2012

Michael R. White
No. M29108
Exp. 6/30/2014
MECH
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

	DESIGN	BY <i>Michael R.White</i>	CHECKED <i>Alan M.Torres</i>	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT	SHEET M-3						
	DETAILS	BY <i>Michael R.White</i>	CHECKED <i>Alan M.Torres</i>			POST MILE								
	QUANTITIES	BY <i>Michael R.White</i>	CHECKED <i>Alan M.Torres</i>			DOOR & SECURITY DETAILS								
TAEMWW Imperial Rev. 3/12			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3	UNIT 3618 PROJECT NUMBER & PHASE 06120002391 EA 2HT20x	CHSTP CONTRACT NO.		REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET	OF		
									DISREGARD PRINTS BEARING EARLIER REVISION DATES → 4/28/12 5/14/12 5/29/12					
													M-3.dgn	

GRAPHIC SYMBOLS FOR ELECTRICAL WIRING AND LAYOUT DIAGRAMS										GRAPHIC SYMBOLS FOR ELECTRICAL DIAGRAMS									
SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION		SYMBOL		DESCRIPTION					
	POLE-TOP ELECTROLIER	S	SINGLE-POLE SWITCH		SURFACE METAL RACEWAY		CIRCUIT BREAKER, SINGLE-POLE		CIRCUIT BREAKER, DOUBLE-POLE		CIRCUIT BREAKER, THREE-POLE		GFCI CIRCUIT BREAKER, WITH GROUND FAULT CIRCUIT INTERRUPTER		CIRCUIT BREAKER, SINGLE-POLE, SWITCHED NEUTRAL				
	POLE-ARM ELECTROLIER	S2	DOUBLE-POLE SWITCH		CONDUCTOR INFO (PER CONDUIT) CONDUIT TYPE CONDUIT SIZE NUMBER OF CONDUITS (NO NUMBER INDICATES ONE CONDUIT)		CONTACT, NORMALLY OPEN		CONTACT, NORMALLY CLOSED		CONTACT, NORMALLY CLOSED, TIME DELAY CLOSING ON DE-ENERGIZING		CONTACT, NORMALLY OPEN, TIME DELAY OPENING ON DE-ENERGIZING		CONTACT, NORMALLY OPEN, TIME DELAY CLOSING ON ENERGIZING				
	SURFACE FLUORESCENT, METAL HALIDE, OR SODIUM VAPOR FIXTURE	S3	THREE-WAY SWITCH		CONDUIT, RIGID STEEL, UNDERGROUND		CONTACT, NORMALLY CLOSED, TIME DELAY OPENING ON ENERGIZING		CONTACT, SINGLE-POLE, DOUBLE-THROW		OPERATING COIL		LIQUID LEVEL ACTUATED SWITCH, NORMALLY CLOSED		LIQUID LEVEL ACTUATED SWITCH, NORMALLY OPEN				
		S4	FOUR-WAY SWITCH		CONDUIT, POLYVINYL CHLORIDE, UNDERGROUND		PRESSURE ACTUATED SWITCH, NORMALLY CLOSED		PRESSURE ACTUATED SWITCH, NORMALLY OPEN		FLOW ACTUATED SWITCH, NORMALLY CLOSED		FLOW ACTUATED SWITCH, NORMALLY OPEN		TEMPERATURE ACTUATED SWITCH, NORMALLY CLOSED				
		SD	AUTOMATIC DOOR		CONDUIT, FLEXIBLE		TEMPERATURE ACTUATED SWITCH, NORMALLY OPEN		LIMIT SWITCH, NORMALLY CLOSED		LIMIT SWITCH, NORMALLY OPEN		PUSHBUTTON SWITCH, NORMALLY CLOSED		PUSHBUTTON SWITCH, NORMALLY OPEN				
		SK	KEY OPERATED SWITCH		CONDUIT, TURN UP		SWITCH, SINGLE-POLE		SWITCH, SINGLE-POLE, DOUBLE-THROW		SWITCH, DOUBLE-POLE		SWITCH, DOUBLE-POLE, DOUBLE-THROW		SWITCH, SINGLE-POLE, 3-POSITION				
		SP	SWITCH AND PILOT LIGHT		CONDUIT, TURN DOWN		THERMAL OVERLOAD		FUSE		RESISTOR		VARIABLE RESISTOR		TRANSFORMER WINDING				
	SURFACE OR PENDANT CONTINUOUS ROW FLUORESCENT FIXTURES	SMC	MOMENTARY CONTACT SWITCH		CONDUIT SEAL, EXPLOSION-PROOF		GROUNDING ELECTRODE		ENCLOSURE BOND		PILOT LIGHT (A=AMBER, G=GREEN, R=RED)		GENERATOR		MOTOR				
NOTE: A LOWER CASE LETTER NEAR GRAPHIC LIGHTING FIXTURE SYMBOL DENOTES THAT FIXTURE IS CONTROLLED BY A SIMILARLY MARKED SWITCH, AN ALPHA-NUMERIC SYMBOL NEAR GRAPHIC LIGHTING FIXTURE SYMBOL DENOTES FIXTURE TYPE, (I=INCANDESCENT, F=FLUORESCENT, MH=METAL HALIDE, H=HIGH PRESSURE SODIUM VAPOR), DESIGN TYPE, NUMBER OF LAMPS AND WATTAGE.		SRC	REMOTE CONTROL SWITCH		CONDUIT, EXPANSION JOINT		FAN MOTOR												
		SWP	WEATHERPROOF SWITCH		ADAPTER, ONE TYPE CONDUIT TO ANOTHER														
		SF	FAN SWITCH		POLE														
		SL	LIGHT SWITCH		OCCUPANCY SENSOR														
		SH	HEATER SWITCH		OCCUPANCY SENSOR POWER PACK														
EXAMPLE : (4) F2-2x32 32 WATT LAMPS 2 LAMPS DESIGN TYPE FLUORESCENT NUMBER OF FIXTURES		SVS	VARIABLE SPEED MOTOR CONTROL SWITCH		MANUAL PULL STATION														
		SCHLF	TWO TIMER SWITCHES, ONE SWITCH FOR LIGHT AND FAN AND ONE SWITCH FOR HEAT LAMP		AUDIO/VISUAL ALARM DEVICE														
		S1	OCCUPANCY SENSOR WALL SWITCH, SINGLE LEVEL		HEAT DETECTOR														
		S2	OCCUPANCY SENSOR WALL SWITCH, BILEVEL		SMOKE DETECTOR														
		SM	MOTION SENSOR SWITCH		GLASS BREAK DISCRIMINATOR														
	BLANK OUTLET	ST	MANUAL MOTOR STARTING SWITCH, THERMAL OVERLOAD TYPE		MAGNETIC CONTACT SWITCH-PEDESTRIAN DOOR														
	JUNCTION BOX	SHP	MANUAL MOTOR STARTING SWITCH, WITHOUT OVERLOAD ELEMENT		MAGNETIC CONTACT SWITCH-VEHICLE DOOR														
	DROP CORD	TS	TIMER SWITCH		COMBINATION DETECTOR (MICROWAVE/PASSIVE INFRARED)														
	SINGLE RECEPTACLE OUTLET		KEYPAD FOR ALARM SYSTEM		PULL BOX (E-ELECTRICAL, T-TELEPHONE, R-RADIO)														
	DUPLEX RECEPTACLE OUTLET		COMBINATION DETECTOR (MICROWAVE/PASSIVE INFRARED)		PULL BOX (TRAFFIC-RATED)-LETTER INDICATES TYPE OF PULL BOX (E-ELECTRICAL, T-TELEPHONE, R-RADIO)														
	DUPLEX RECEPTACLE OUTLET (WITH GFCI)		COMBINATION HEAT, LIGHT, AND FAN UNIT		SECTION/ELEVATION LETTER														
	DUPLEX RECEPTACLE OUTLET, WEATHERPROOF (WITH GFCI)		SHEET NUMBER		DETAIL NUMBER														
	SINGLE, SPECIAL PURPOSE RECEPTACLE OUTLET																		
	DUPLEX, SPECIAL PURPOSE RECEPTACLE OUTLET																		
	RANGE OUTLET																		
	CLOCK HANGER RECEPTACLE																		
	FAN HANGER RECEPTACLE																		
	FLOOR SINGLE RECEPTACLE OUTLET																		
	FLOOR DUPLEX RECEPTACLE OUTLET																		
	FLOOR SPECIAL PURPOSE OUTLET																		
	FLOOR RADIO OUTLET																		
	FLOOR TELEPHONE OUTLET																		
	MULTI-FLOOR OUTLET, 2 OR MORE GANG																		
	MULTI-OUTLET ASSEMBLY																		
	SWITCH AND SINGLE RECEPTACLE																		
	SWITCH AND DUPLEX RECEPTACLE																		
	RADIO OUTLET																		
	COMMUNICATION OUTLET																		
	SOUND SYSTEM LOUD SPEAKER OUTLET																		
	RADIO OUTLET																		
	TELEVISION OUTLET																		
	MICROPHONE OUTLET																		
	THERMOSTAT																		

Karen Pearson

REGISTERED ELECTRICAL ENGINEER

5-29-12

DATE

REGISTERED PROFESSIONAL ENGINEER

Karen Pearson

No. E 15289

Exp. 3-31-13

ELEC

STATE OF CALIFORNIA

PLANS APPROVAL DATE

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DIST.		COUNTY	ROUTE	POST MILES TOTAL PROJECT		SHEET NO.		TOTAL SHEETS	
06		Fre							
<div><div><div><div><div></div><div>Karen Pearson</div><div>REGISTERED ELECTRICAL ENGINEER</div></div><div>5-29-12</div><div>DATE</div></div><div><div>REGISTERED PROFESSIONAL ENGINEER</div><div>Karen Pearson</div><div>No. E 15289</div><div>Exp. 3-31-13</div><div>ELEC</div><div>STATE OF CALIFORNIA</div></div></div><div>PLANS APPROVAL DATE</div><div>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</div><div></div></div>									

DESIGN		BY	Karen Pearson	CHECKED	Helmy Abdelsayed	STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		HIGH SPEED RAIL AUTHORITY		SHEET	
DETAILS		BY	Kathi Andreasen	CHECKED	Karen Pearson	DEPARTMENT OF TRANSPORTATION		ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN		POST MILE		FRESNO STREET PUMP PLANT RETROFIT		EE-0	
QUANTITIES		BY	Karen Pearson	CHECKED	Helmy Abdelsayed							LEGEND			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						0 1 2 3		UNIT PROJECT NUMBER & PHASE 3618 06120002391		CHSTP CONTRACT NO.		REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET OF	
EA 000000												DISREGARD PRINTS BEARING EARLIER REVISION DATES			

ee_00_0_legend.dwg

ABBREVIATIONS

A

APERES

AC

ALTERNATING CURRENT or ASPHALT CONCRETE

A/C

AIR CONDITIONING UNIT

ACS

AIR COMPRESSOR STARTER

AFCI

ARC FAULT CIRCUIT INTERRUPTER

AI

ANALOG INPUT

AL

ALARM LIGHT

AO

ANALOG OUTPUT

Approx

APPROXIMATE

AR

ALARM RESET

AVC

AIR VOLUME CONTROLLER

B

BARE COPPER

BD

BUILDING DISCONNECT

Bldg

BUILDING

BP

BOOSTER PUMP

Brk

BREAKER

C

CONDUIT

Cat

CATEGORY

CB

CIRCUIT BREAKER

CC

CENTER CHANNEL LIGHT

CCTV

CLOSED CIRCUIT TELEVISION

Ckt

CIRCUIT

CL

CHAIN LINK

CL

CENTER LINE

Clr

CLEAR or CLEARANCE

CM

CENTER MARGIN LIGHT

CMS

CHANGEABLE MESSAGE SIGN

COMM

COMMUNICATION

Conc

CONCRETE

CR

CONTROL RELAY

CSW

CURRENT SWITCH

D

DEPTH

DC

DIRECT CURRENT

DI

DIGITAL INPUT

Dia

DIAMETER

DLC

LOOP DETECTOR LEAD-IN CABLE

DO

DIGITAL OUTPUT

DP

DUPLEX PLUG RECEPTACLE

DS

DOOR SWITCH

E

EXISTING

EB

EASTBOUND

EF

EXHAUST FAN

Elev

ELEVATION

EMS

EXTINGUISHABLE MESSAGE SIGN

F

FUSE

FG

FINISH GRADE

FL

FAILURE LIGHT

FLA

FLASHER

Flex

FLEXIBLE CONDUIT

FLS

FLOW SWITCH

FO

FIBER OPTIC

FR

FAILURE RESET or FLAME RESISTANT

FS

FLOAT SWITCH

G

GROUND

Ga

GAUGE

Galv

GALVANIZED

GFCI

GROUND FAULT CIRCUIT INTERRUPTER

GRS

GALVANIZED RIGID STEEL

H

HORSEPOWER

hP

HORSEPOWER

HPS

HIGH PRESSURE SODIUM

I

IRRIGATION CONTROLLER

IC

IRRIGATION CONTROLLER

ICC

IRRIGATION CONTROLLER CABINET

ISR

INTRINSICALLY SAFE RELAY

IR

INDUCTION RELAY

J

JUNCTION BOX

JB

JUNCTION BOX

K

KILOVOLT

kV

KILOVOLT

kVA

KILOVOLT AMPERES

kW

KILOWATT

L

LIGHT or LENGTH

L

LIGHT

LC

LIGHTING CONTACTOR

LCD

LIQUID CRYSTAL DISPLAY

LCP

LIGHTING CONTROL PANEL

LD

LIGHT DISCONNECT

LDCI

LEAK DETECTOR CIRCUIT INTERRUPTER

LED

LIGHT EMITTING DIODE

LL

LIQUID LEVEL RELAY

LLC

LIQUID LEVEL CONTROLLER

LP

LIGHT PANEL

LPS

LOW PRESSURE SODIUM

LS

LIGHT SWITCH

LT

LIGHT TRANSFORMER

LTO

LIGHT TRANSFORMER OVERLOAD

M

MAXIMUM

Max

MAXIMUM

MB

MAIN BREAKER

MC

METALLIC CONDUIT

MCP

MOTOR CIRCUIT PROTECTOR

MCC

MOTOR CONTROL CENTER

MH

MOUNTING HEIGHT

Min

MINIMUM

Misc

MISCELLANEOUS

MSB

MAIN SWITCHBOARD

MT

EMPTY CONDUIT

N

NEW

(N)

NEW

Nav

NAVIGATIONAL LIGHTS

NB

NEUTRAL BUS or NORTHBOUND

NC

NORMALLY CLOSED

No.

NUMBER

Nos.

NUMBERS

NO

NORMALLY OPEN

NPS

NOMINAL PIPE SIZE

NSW

NEUTRAL SWITCHING BREAKER

O

ON CENTER

O/C

ON CENTER

OG

ORIGINAL GROUND

OH

OVERHEAD

OL

OVERLOAD

P

POLE (CIRCUIT BREAKER)

PB

PULL BOX or PUSHBUTTON

PCC

PORTLAND CONCRETE CEMENT

PCP

PUMP CONTROL PANEL

PEC

PHOTOELECTRIC CONTROL

PEU

PHOTOELECTRIC UNIT

PFR

PHASE FAILURE RELAY

PFRD

PHASE FAILURE RELAY DISCONNECT

PL

PLATE

PL

PILOT LIGHT

PS

POWER SWITCH or PRESSURE SWITCH

PTS

POWER TRANSFER SWITCH

PV

PHOTOVOLTAIC

PVC

POLYVINYL CHLORIDE

R

RESISTOR

RES

RESISTOR

Rm

ROOM

RTB

RADIO TERMINAL BOARD

R/W

RIGHT OF WAY

S

STARTER COIL

Sch

SCHEDULE

SD

SERVICE DISCONNECT

SFR

SEAL FAILURE RELAY

SL

SUMP LIGHT

SPR

STANDBY POWER RECEPTACLE

Sq

SQUARE

SS

SELECTOR SWITCH or STAINLESS STEEL

ST

STARTER

Std

STANDARD

SV

SOLENOID VALVE

SWIM

SLOW WEIGH-IN-MOTION

T

TERMINAL BLOCK

TB

TERMINAL BLOCK

TDR

TIME DELAY RELAY

TGLS

TOGGLE SWITCH

TM

TIME METER

Tot

TOTAL

TS

TIMER SWITCH

TSW

TEST SWITCH

TTB

TELEPHONE TERMINAL BOARD

Typ

TYPICAL

U

UNINTERRUPTIBLE POWER SUPPLY

UPS

UNINTERRUPTIBLE POWER SUPPLY

V

VOLT(S)

V

VOLT

Var

VARIABLE or VARIES

W

WATT or WIDTH

W

WATT

WB

WESTBOUND

WIM

WEIGH-IN-MOTION

WLS

WATER LEVEL SWITCH

WP

WEATHERPROOF

WSMS

WEIGH STATION MESSAGE SIGN

X

TRANSFORMER

XFMR

TRANSFORMER

SYMBOLS

∠

ANGLE

@

AT

°

DEGREES

Δ

DELTA

Ω

OHM(S)

∅

PHASE

±

PLUS OR MINUS

DIST.

COUNTY

ROUTE

POST MILES
TOTAL PROJECT

SHEET
NO.

TOTAL
SHEETS

06

Fre

5-29-12

DATE

REGISTERED ELECTRICAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER

Karen Pearson

No. E 15289

Exp. 3-31-13

ELEC

STATE OF CALIFORNIA

PLANS APPROVAL DATE

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CALIFORNIA

HIGH-SPEED RAIL AUTHORITY

PROJECT NOTES

1. Separate grounded (Neutral) conductor shall be used for each 120-volt circuit.

2. Homeruns to Panelboards shall be installed as shown on the plans. Homeruns shall not be combined.

3. A single insulated equipment grounding conductor, sized as required, shall be installed in each conduit run.

STANDARD NOTES

AB

Abandon. If applied to conduit, remove conductors.

BC

Install pull box in existing conduit run.

CB

Install conduit into existing pull box.

CC

Connect new and existing conduit. Remove existing conductors and install conductors as indicated.

CF

Conduit to remain for future use. Remove conductors, install pull rope and plug.

FA

Remove foundation above grade and abandon foundation below grade.

RL

Relocate equipment.

RLD

Relocated equipment.

SC

Splice new to existing conductors.

DESIGN

BY Karen Pearson

CHECKED Helmy Abdelsayed

DETAILS

BY Kathi Andreasen

CHECKED Karen Pearson

QUANTITIES

BY Karen Pearson

CHECKED Helmy Abdelsayed

STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER
AND
WASTEWATER DESIGN

BRIDGE NO.

POST MILE

CHSTP CONTRACT NO.

REVISION DATES (PRELIMINARY STAGE ONLY)

DISREGARD PRINTS BEARING
EARLIER REVISION DATES

4/18/12

5/29/12

UNIT PROJECT NUMBER & PHASE

3618 06120002391

SHEET OF

EE-0.1

TAEMWW Imperial Rev. 3/12

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

0 1 2 3

EA 000000

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Karen Pearson
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5-29-12
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STATE OF CALIFORNIA

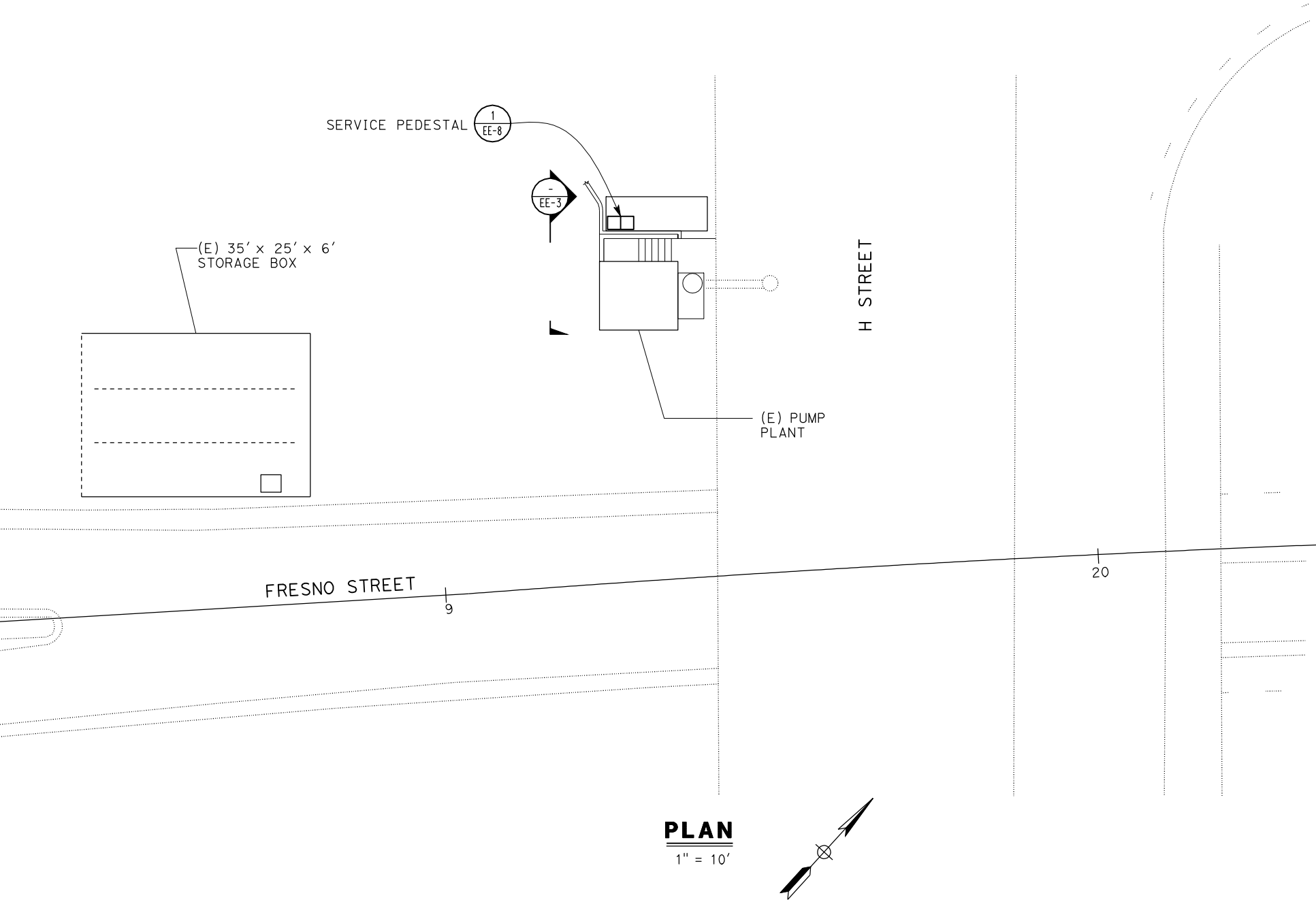
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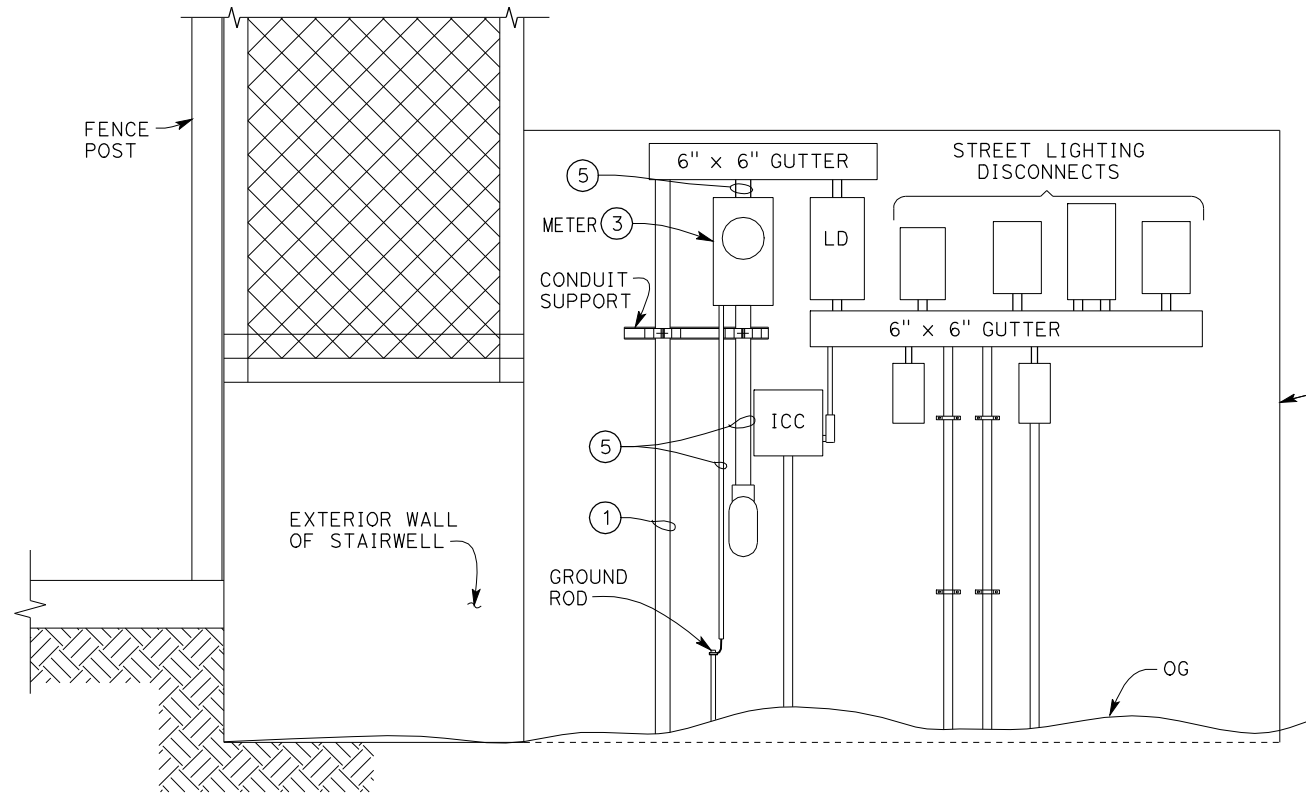
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

- General Notes:
1. The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
 2. Contractor must coordinate the complete service installation, the location of service pole, and the location of the Utility transformer with PG&E. Contractor must install high voltage conduit and conductors from the transformer to the service disconnect as required by PG&E.

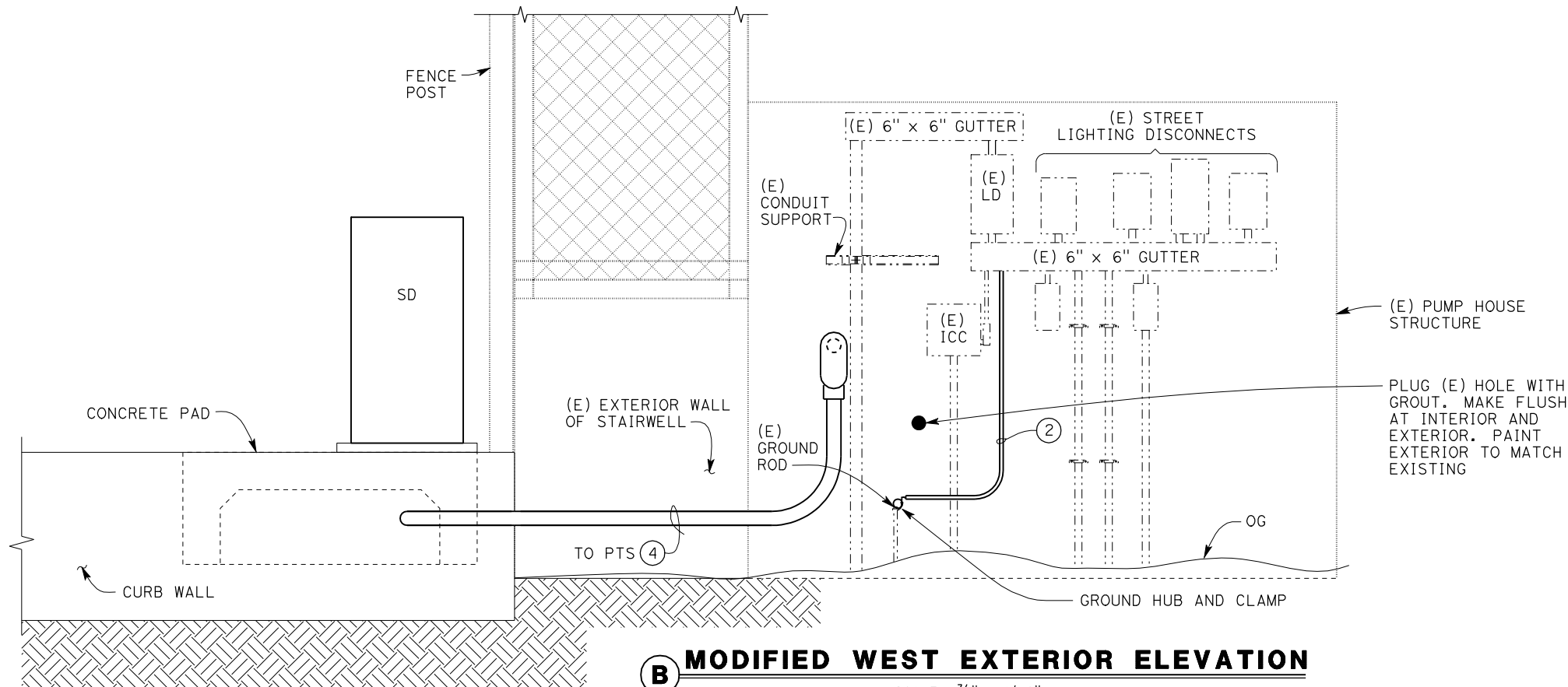


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TAEMWW Imperial Rev. 3/12	 DESIGN SUPERVISOR	DESIGN	BY Karen Pearson	CHECKED Helmy Abdelsayed	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT				SHEET EE-1			
	 DESIGN ENGINEER	DETAILS	BY Kathi Andreasen	CHECKED Karen Pearson			POST MILE	ELECTRICAL SITE PLAN							
		QUANTITIES	BY Karen Pearson	CHECKED Helmy Abdelsayed											
		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0	1	2	3	UNIT 3618 PROJECT NUMBER & PHASE 06120002391		CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY)	
									EA 000000	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	4/18/12	5/29/12			ee_01_site.dgn



A EXISTING WEST EXTERIOR ELEVATION
SCALE $\frac{3}{4}" = 1'-0"$



B MODIFIED WEST EXTERIOR ELEVATION
SCALE $\frac{3}{4}" = 1'-0"$

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GENERAL NOTES:

1. The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
2. All conduit elbows and risers must be Type 1.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

Karen Pearson 5-29-12
REGISTERED ELECTRICAL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
Karen Pearson
No. E 15289
Exp. 3-31-13
ELEC
STATE OF CALIFORNIA

PLANS APPROVAL DATE _____

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

NOTES:

- ① Existing pump house and street lighting 120/208 V, 3-Phase, 4-wire service conduit and conductors to remain.
- ② 1"C, 1#2G to ground existing LD to ground rod. Use ground hub and clamp for ground rod connection.
- ③ Salvage meter and deliver to PG&E.
- ④ Route 3"C underground from the PTS to the west exterior wall as shown. Core drill opening in the exterior wall for the 3"C to enter into the back of the Power Switch inside the Control Room.
- ⑤ Remove existing pump house service conduit and conductors. Plug unused hole in existing gutter.

TAEMWW Imperial Rev. 3/12	DESIGN	BY Karen Pearson	CHECKED Helmy Abdelsayed	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT WEST WALL EXISTING AND MODIFIED EXTERIOR ELEVATIONS	SHEET		
	DETAILS	BY Kathi Andreasen	CHECKED Karen Pearson		ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	POST MILE		EE-3		
	QUANTITIES	BY Karen Pearson	CHECKED Helmy Abdelsayed							
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3	UNIT PROJECT NUMBER & PHASE	3618 06120002391	CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
					EA 000000		DISREGARD PRINTS BEARING EARLIER REVISION DATES	5/24/12 5/29/12		

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GENERAL NOTES:

1. The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
2. All conduit elbows and risers must be Type 1.

- ① Core drill holes sized to accommodate the required conduit shown.
- ② Route 1"C, with 1/4" diameter polyethylene tubing to compression bell. See sheet EE-5 for bell location.
- ③ Route 1"C, with float switch cables from gutter to the pit. See sheet EE-5 for float switch location.
- ④ Route 2"C, with control cable for pump motors #1 and #2 from the pit to the gutter.
- ⑤ Route 2"C, with power cable from the pit to pump motor starter #1, ST1.
- ⑥ Route 2"C, with power cable from the pit to pump motor starter #2, ST2.
- ⑦ Install painted plywood panel for equipment mounting. Plywood thickness must be 3/4".
- ⑧ Install one metal barrier to house the ISR1.
- ⑨ The following components must be mounted inside the Control Panel: CR3, CR4, TDR1, power supply, ISR1, GFCI switch, solenoid valve, air compressor, SFR1, and SFR2.
- ⑩ In addition to ST1; CS1, and CR1 must be installed inside the starter panel.
- ⑪ In addition to ST2; CS2 and CR2 must be installed inside the starter panel.
- ⑫ Provide conduit to interconnect equipment as required where sizes are not shown.

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	DETAILS	BY Kathi Andreasen	CHECKED Karen Pearson			POST MILE	CONTROL ROOM MODIFIED INTERIOR ELEVATIONS				
	QUANTITIES	BY Karen Pearson	CHECKED Helmy Abdelsayed								
TAEMWW Imperial Rev. 3/12				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0123	UNIT 3618 PROJECT NUMBER & PHASE 06120002391	CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY)			SHEET OF
					EA 000000		5/4/12 5/29/12	DISREGARD PRINTS BEARING EARLIER REVISION DATES → ee 04 interior control rm elev.dgn			

GENERAL NOTES:

1. The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
2. All conduit elbows and risers must be Type 1.

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06	Fre				

Karen Pearson

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

A WEST WALL MODIFIED SECTION
3/8" = 1'-0"

B NORTH WALL MODIFIED SECTION
3/8" = 1'-0"

C SOUTH WALL MODIFIED SECTION
3/8" = 1'-0"

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DETAILS	BY Kathi Andreasen	CHECKED Karen Pearson
QUANTITIES	BY Karen Pearson	CHECKED Helmy Abdelsayed

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ELECTRICAL-MECHANICAL-WATER
AND
WASTEWATER DESIGN

BRIDGE NO.
POST MILE

**HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT**
MODIFIED SECTIONS

SHEET
EE-5

TAEMWW Imperial Rev. 3/12

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

0 1 2 3

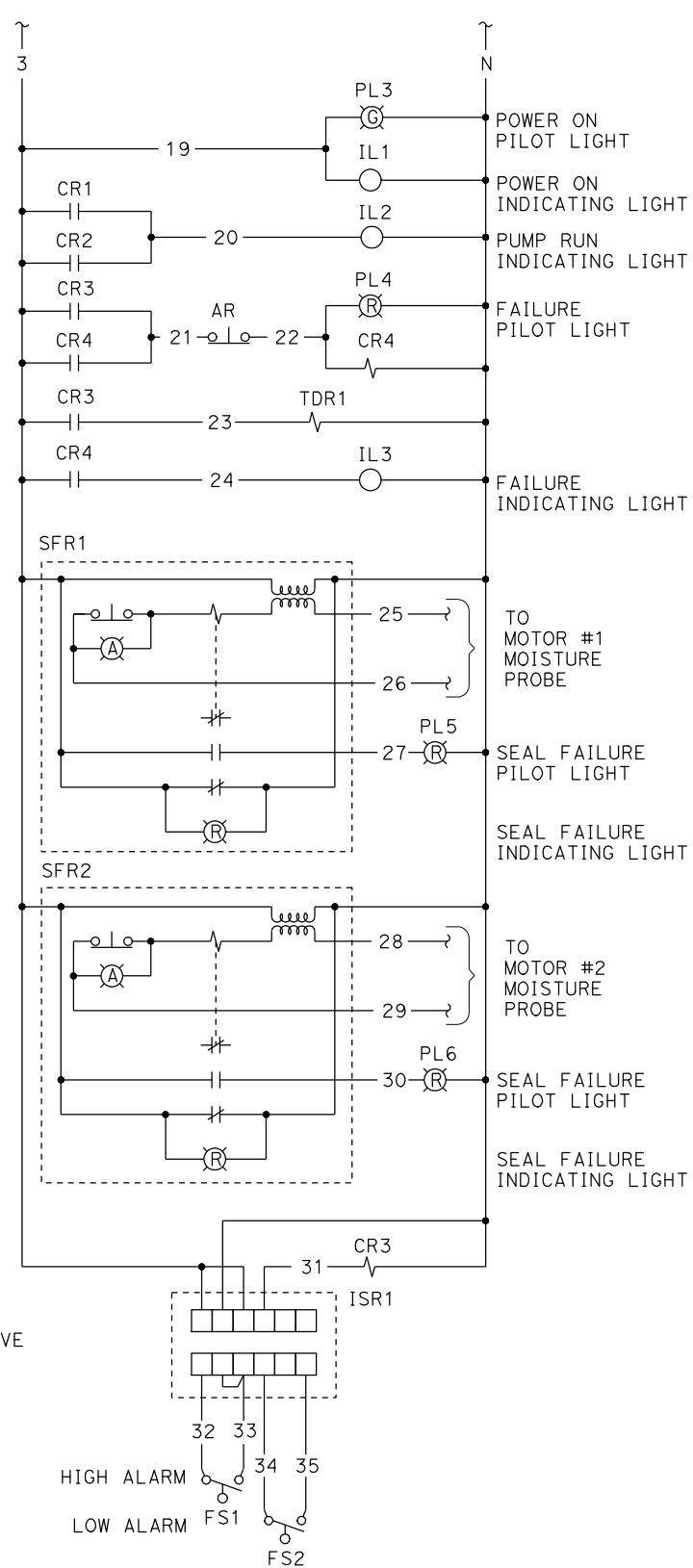
UNIT 3618
PROJECT NUMBER & PHASE 06120002391
EA 000000

CHSTP CONTRACT NO.

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				

Karen Pearson 5-29-12
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CALIFORNIA

HIGH-SPEED RAIL AUTHORITY

BRIDGE NO.	<h2 style="text-align: center;">HIGH SPEED RAIL AUTHORITY</h2> <h3 style="text-align: center;">FRESNO STREET PUMP PLANT RETROFIT</h3>
POST MILE	


CONTROL SCHEMATIC DIAGRAM

SHEET
EE-7

General Notes:

1. The Contractor must verify all controlling field dimensions before ordering or fabricating any material.
2. Seismic bracing for the Service Pedestal must be installed per the manufacturer's recommendations to meet or exceed Seismic Zone 4 requirements.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				



REGISTERED ELECTRICAL ENGINEER

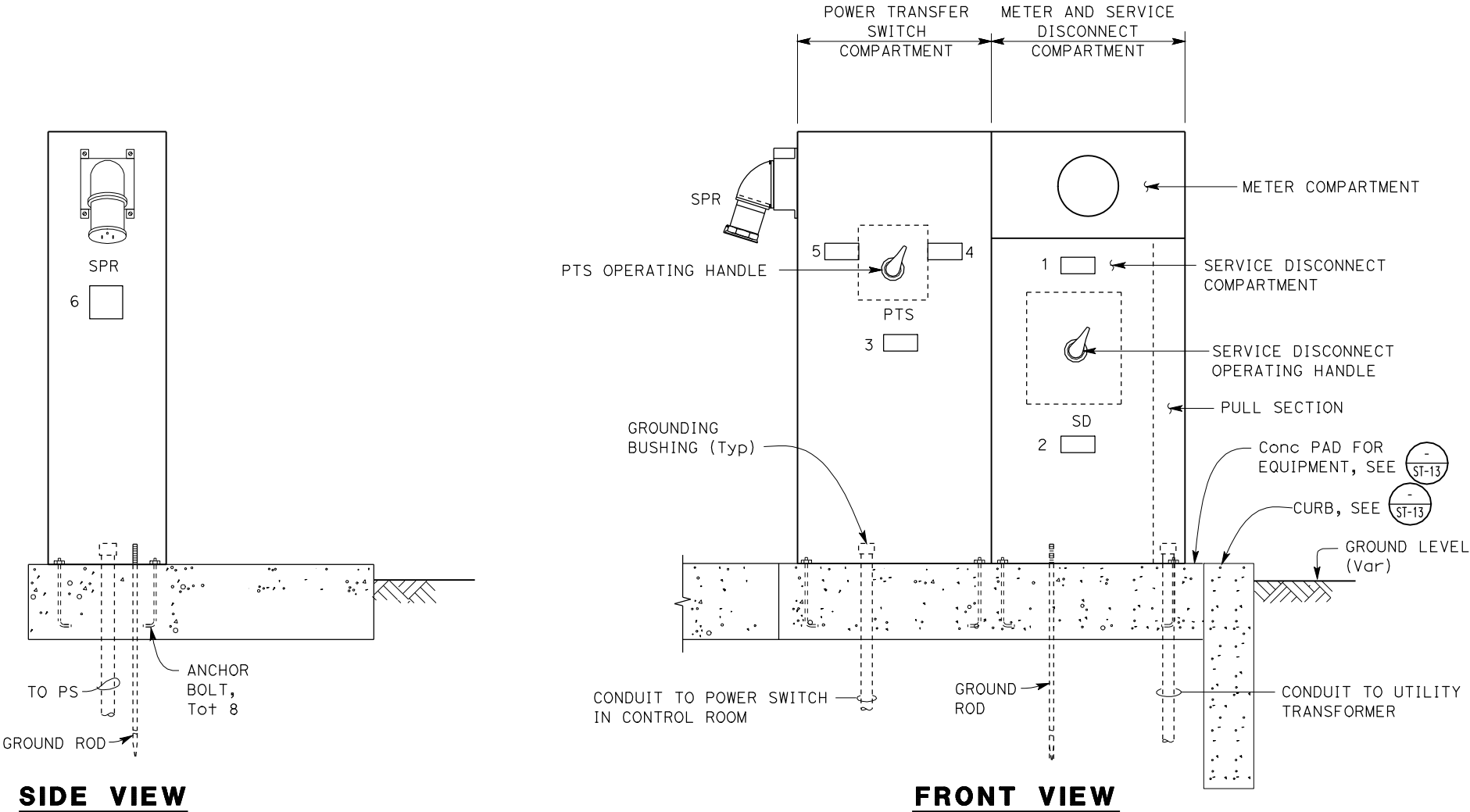
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**CALIFORNIA**
HIGH-SPEED RAIL AUTHORITY



NAMEPLATE SCHEDULE		
ITEM No.	INSCRIPTION	LETTER HEIGHT
1	240/120-VOLT, 3-PHASE, 4-WIRE, 200-AMPERE	1/4"
2	SERVICE DISCONNECT	1/4"
3	POWER TRANSFER SWITCH	1/4"
4	UTILITY	1/4"
5	STANDBY	1/4"

WARNING PLATE		
ITEM No.	INSCRIPTION	LETTER HEIGHT
6	240 VOLTS ONLY	1/4"

1 SERVICE PEDESTAL
NO SCALE
(EXTERIOR DOOR NOT SHOWN, INTERIOR DOORS CLOSED)

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QUANTITIES	BY Karen Pearson	CHECKED Helmy Abdelsayed

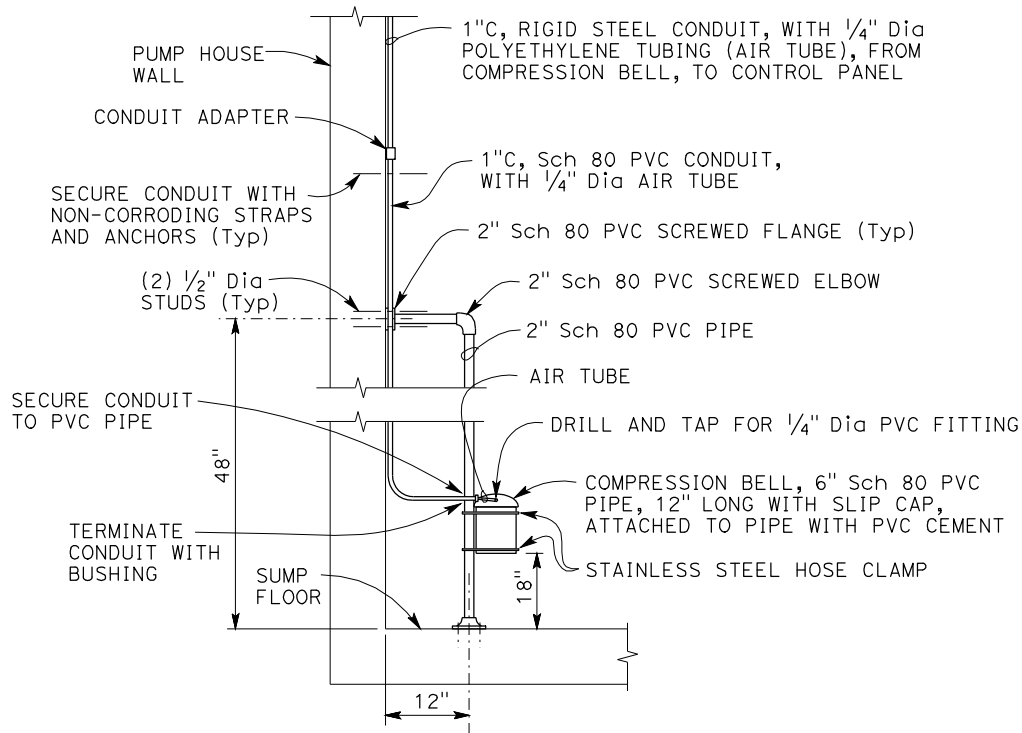
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DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER
AND
WASTEWATER DESIGN

BRIDGE NO.
POST MILE

**HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT**
SERVICE PEDESTAL DETAILS

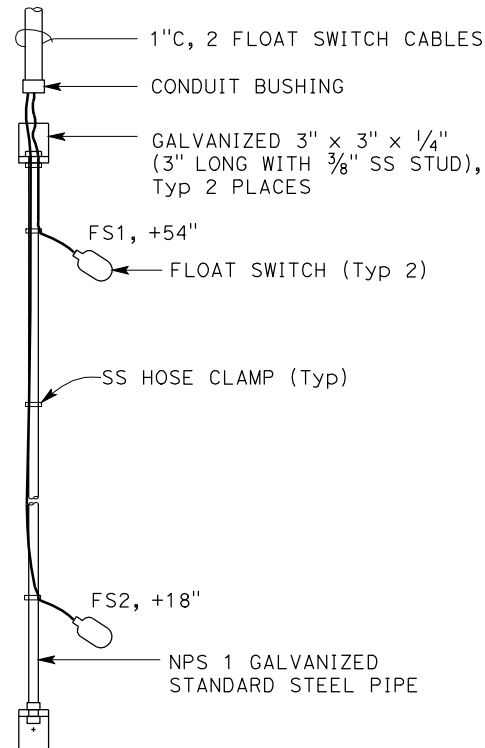
SHEET
EE-8



AIR TUBE AND COMPRESSION

1 BELL MOUNTING DETAIL

NO SCALE



FLOAT SWITCH

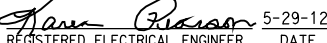
2 MOUNTING DETAIL

NO SCALE

GENERAL NOTES:

1. The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
2. All conduit elbows and risers must be Type 1.

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**CALIFORNIA**
HIGH-SPEED RAIL AUTHORITY

FLOAT SETTINGS

FLOAT	FROM THE CONCRETE FLOOR	ELEVATION*
LOW	18"	260.75
HIGH	54"	263.75

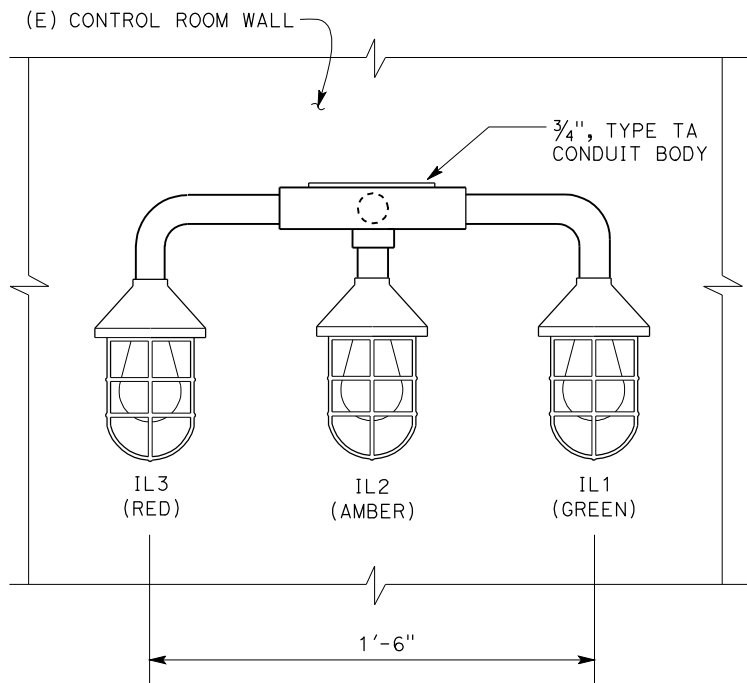
PUMP SETTINGS

PUMP CONDITION	FROM THE CONCRETE FLOOR	CONTROLLER SETTING	ELEVATION*
LEAD ON	36"	18"	262.25
LEAD OFF	24"	6"	261.25
LAG ON	42"	24"	262.75
LAG OFF	30"	12"	261.75

*The Elevation numbers given here are referenced from the concrete floor near the pumps as being at 259.25

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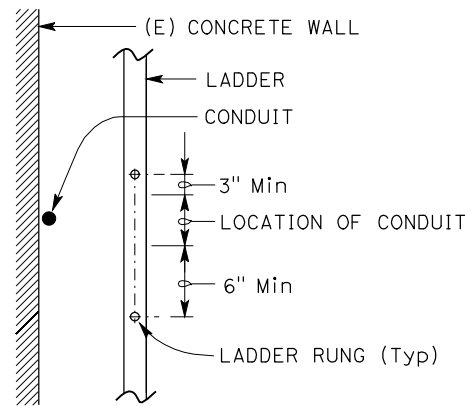
DESIGN	BY	Karen Pearson	CHECKED	Helmy Abdelsayed	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT	SHEET EE-9				
	DETAILS	BY	Kathi Andreasen	CHECKED			Karen Pearson			POST MILE			
	QUANTITIES	BY	Karen Pearson	CHECKED			Helmy Abdelsayed			DETAILS 1			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0		1	2	3	UNIT PROJECT NUMBER & PHASE	3618 06120002391	CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET	OF
TAEMWW Imperial Rev. 3/12		DISREGARD PRINTS BEARING EARLIER REVISION DATES		5/29/12		5/29/12		ee_09_details_1.dgn					



ELEVATION

1 INDICATING LIGHTS MOUNTING DETAIL

NO SCALE



2 CONDUIT BEHIND LADDER

NO SCALE

GENERAL NOTES:

1. The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
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REGISTERED PROFESSIONAL ENGINEER
Karen Pearson
No. E 15289
Exp. 3-31-13
ELEC
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY

DESIGN	BY Karen Pearson	CHECKED Helmy Abdelsayed
DETAILS	BY Kathi Andreasen	CHECKED Karen Pearson
QUANTITIES	BY Karen Pearson	CHECKED Helmy Abdelsayed

STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
ELECTRICAL-MECHANICAL-WATER
AND
WASTEWATER DESIGN

BRIDGE NO.
POST MILE

**HIGH SPEED RAIL AUTHORITY
FRESNO STREET PUMP PLANT RETROFIT**

SHEET
EE-10

DETAILS 2

TAEMWW Imperial Rev. 3/12

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

0 1 2 3

UNIT 3618
PROJECT NUMBER & PHASE 06120002391

EA 000000

CHSTP CONTRACT NO.

REVISION DATES (PRELIMINARY STAGE ONLY)

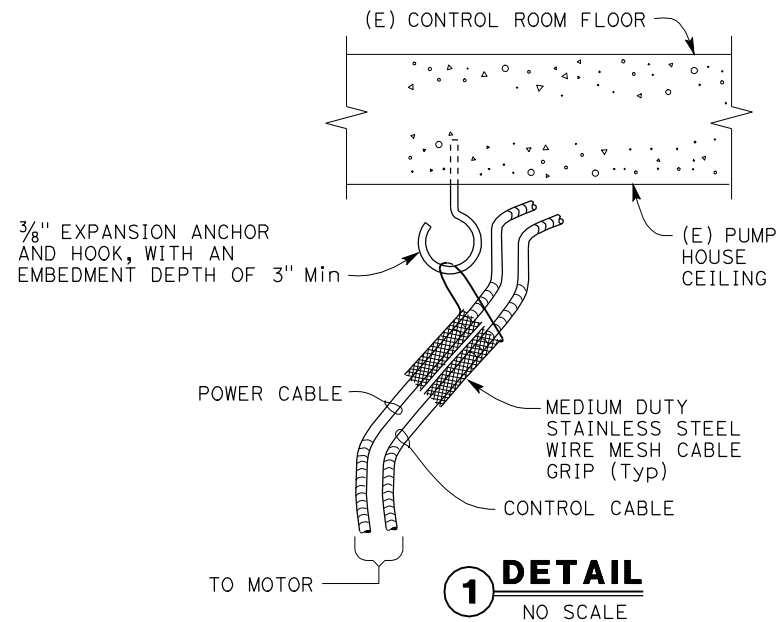
DISREGARD PRINTS BEARING
EARLIER REVISION DATES

4/18/12 5/29/12

SHEET OF

ee_10_details_2.dgn


29-MAY-2012 13:16



GENERAL NOTES:

1. The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
2. All conduit elbows and risers must be Type 1.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre				



REGISTERED ELECTRICAL ENGINEER

5-29-12
DATE

REGISTERED PROFESSIONAL ENGINEER
Karen Pearson
No. E 15289
Exp. 3-31-13
ELEC
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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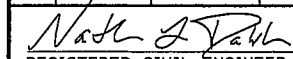


CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

THIS DRAWING ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN	BY	Karen Pearson	CHECKED	Helmy Abdelsayed	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO.	HIGH SPEED RAIL AUTHORITY FRESNO STREET PUMP PLANT RETROFIT	SHEET EE-11			
	DETAILS	BY	Kathi Andreasen	CHECKED			Karen Pearson			POST MILE		
	QUANTITIES	BY	Karen Pearson	CHECKED			Helmy Abdelsayed					
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0123	UNIT PROJECT NUMBER & PHASE	3618 06120002391	CHSTP CONTRACT NO.	REVISION DATES (PRELIMINARY STAGE ONLY) DISREGARD PRINTS BEARING EARLIER REVISION DATES	5/29/12	SHEET	OF
TAEMWW Imperial Rev. 3/12						EA 000000		ee_11_details_3.dgn		29-MAY-2012 13:17		

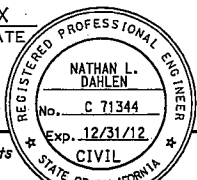
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre				



REGISTERED CIVIL ENGINEER

X

DATE



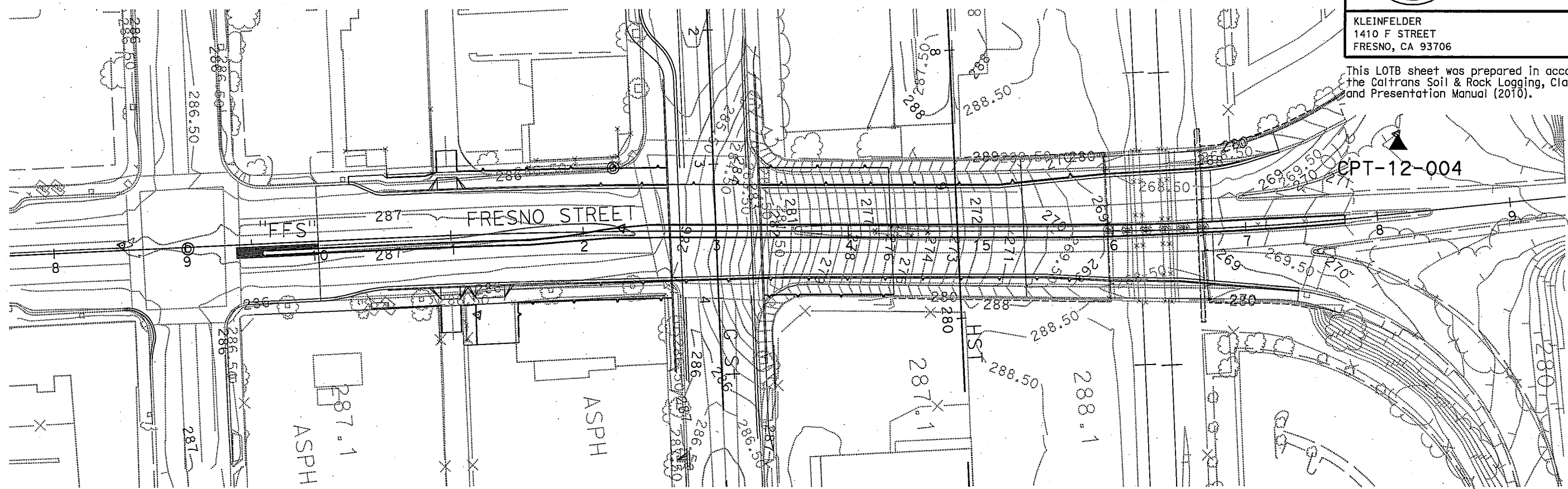
PLANS APPROVAL DATE

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KLEINFELDER
1410 F STREET
FRESNO, CA 93706

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).



BENCHMARKS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

4-SON-116
PHOTO ASC: 0820-17
MAP ASC: 0820-17
FILENAME: 408217e0501.dgn
DIGITAL COMPILATION BY:
RADMAN AERIAL SURVEYS

FILE 01 OF 03
PHOTO DATE: 10-23-07
MAP COMPLETION DATE: 3-31-08
PHOTO SCALE 1:3000

VERTICAL DATUM: NAVD 1988
COORDINATE SYSTEM: CCS 83 (1991.35)
UNITS: US SURVEY FEET
DESIGN PLANE: 32R

ZONE 2
MAP SCALE 1"= 50'
CONTOUR INTERVAL: 1'
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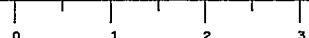
DESIGN	BY MICHAEL WHITE	CHECKED ALAN TORRES
DETAILS	BY AL SANCHEZ	CHECKED NATHAN DAHLEN
QUANTITIES	BY MICHAEL WHITE	CHECKED ALAN TORRES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 6

BRIDGE NO.
POST MILE

HSRA FRESNO ST. PUMP PLANT RETROFIT LOG OF TEST BORINGS 1 OF 4



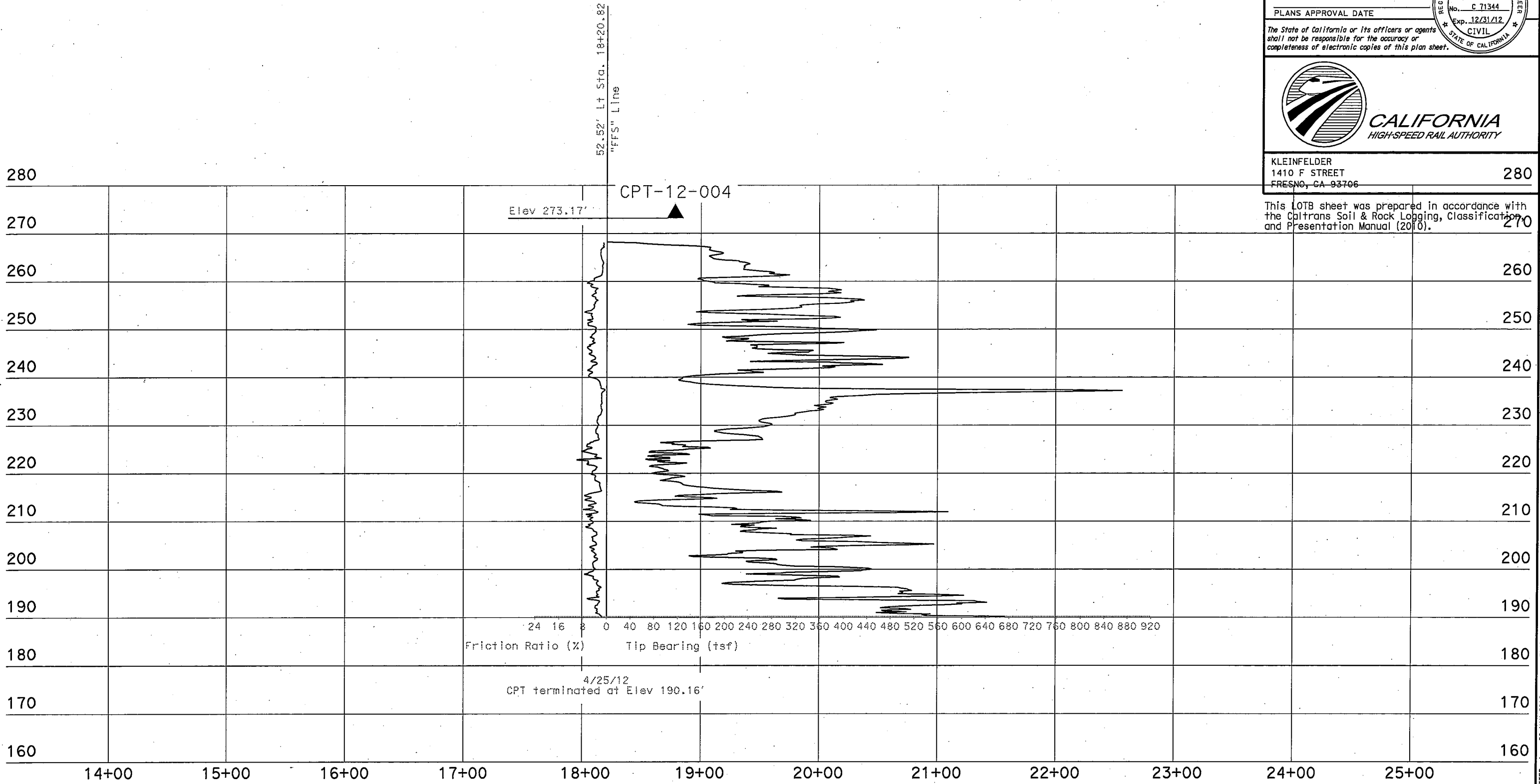
FOR PLAN VIEW AND ADDITIONAL NOTES, SEE
"LOG OF TEST BORINGS" SHEET 1 OF 4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre				
Nathan L. Dahlen			X		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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KLEINFELDER
1410 F STREET
FRESNO, CA 93706

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).



PROFILE
HOR. 1"=40'
VER. 1"=10'

DESIGN	BY MICHAEL WHITE	CHECKED ALAN TORRES
DETAILS	BY AL SANCHEZ	CHECKED NATHAN DAHLEN
QUANTITIES	BY MICHAEL WHITE	CHECKED ALAN TORRES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 6

BRIDGE NO.
POST MILE

HSRA FRESNO ST. PUMP PLANT RETROFIT
LOG OF TEST BORINGS 2 OF 4

DIST

COUNTY

ROUTE

POST MILES

SHEET

TOTAL

06

Fre

TOTAL PROJECT

No.

SHEETS

Nathan L. Dahlen

REGISTERED CIVIL ENGINEER

DATE

X

PLANS APPROVAL DATE

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CALIFORNIA

HIGH-SPEED RAIL AUTHORITY












KLEINFELDER

1410 F STREET

FRESNO, CA 93706

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010).

CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778)
	O	Other (note on LOTB)
Note: Size in inches.		

CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2

Diagram of a rotary boring log. It shows a vertical section of a borehole with various materials and tests. Key labels include: Location, Top Hole El., Hole I.D., Casing driven, Size of Sampler (inches), SPT N-Value (per ASTM 1586-99), P = push sample, or as noted, Description of material, Field & Lab Tests, GWS Elev., Date measured, Material change, Estimated material change, Soil/Rock boundary, Boring Date, Terminated at Elev, Hammer Energy Ratio (ER₁) = %.

Diagram of a hand boring log. It shows a vertical section of a borehole with various materials and tests. Key labels include: Location, Top Hole El., Hole I.D., Blows per 12 in. (Using 28 lb hand hammer with a 12 in. drop or as noted), P, Pulled Pipe, 60 P, 500 Refusal, GWS Elev., Date measured, Description of materials, (S) Sample taken, Boring Date, Terminated at Elev.

Diagram of a Dynamic Cone Penetration Boring (DCPB) log. It shows a vertical section of a borehole with various materials and tests. Key labels include: Location, Top Hole El., Hole I.D., No count recorded, Pushed, Driving rate in seconds per 12 in. (using a Stanley MB 156 percussion hammer and a 2.2 in. cone, or as noted), GWS Elev., Date measured, Description of materials, (S) Sample taken, Boring Date, Terminated at Elev.

Diagram of a Cone Penetration Test (CPT) boring log. It shows a vertical section of a borehole with various materials and tests. Key labels include: Location, Top Hole El., Hole I.D., Pressure measured along sleeve friction element (34.88 in² area) divided by pressure measured on tip element, Pressure measured on tip element (2.33 in² area), Friction Ratio (%), Tip Bearing (Tsf), Boring Date, Terminated at Elev.

DESIGN	BY MICHAEL WHITE	CHECKED ALAN TORRES
DETAILS	BY AL SANCHEZ	CHECKED NATHAN DAHLEN
QUANTITIES	BY MICHAEL WHITE	CHECKED ALAN TORRES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 6

BRIDGE NO.
POST MILE

HSRA FRESNO ST. PUMP PLANT RETROFIT
LOG OF TEST BORINGS 3 OF 4

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 3591 CONTRACT NO.: 06-2HT201
PROJECT NO. & PHASE: 0612000239-1

CHSTP CONTRACT NO.

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES
SHEET OF

FILE => -1162666.dgn

DATE PLOTTED => 30-MAY-2012
TIME PLOTTED => 14:04
USERNAME => 8135425



MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PARTICLE SIZE		
Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (ASTM D 1557)
- (CR) Corrosivity Testing
(CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained
Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90)
Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil
(ASTM D 2166)
Unconfined Compression-Rock
(ASTM D 2938)
- (UU) Unconsolidated Undrained
Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

STATE OF
CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 6

8	BRIDGE NO.
	POST MILE

HSRA FRESNO ST. PUMP PLANT RETROFIT
LOG OF TEST BORINGS 4 OF 4